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MINISTRY OF IRRIGATION AND POWER

REPORT
OF
THE KRISHNA GODAVARI COMMISSION

Annexure XV

Particulars
of
Proposed Irrigation and Hydro-electric schemes,

GODAVARI RIVER SYSTEM

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FOREWORD

The data presented in this Annexure relate to Irrigation and Hydro-electric schemes on the Godavari river system approved for execution in I, II and III plans and are based on the information obtained from the State Governments of Andhra Pradesh, Madhya Pradesh, Maharashtra, Mysore and Orissa supplemented, here and there, by information collected from project reports and official correspondence between the State Governments and the Planning Commission or the Ministry of Irrigation and Power.

This Annexure gives particulars of all schemes that have been referred to in III Five Year Plan, but have not yet been approved for execution and of all other schemes which are contemplated by the State Governments.

STATEMENT SHOWING PROPOSED POWER GENERATION, ANNUAL IRRIGATION AND ANNUAL DIVERSION

Name of State Category of scheme		*Number of schemes*	*Proposed power installed (k.W.)*	*C.C.A. or Ayacut (acres)*	*Proposed annual irrigation (acres)*	*Proposed annual diversion (T.M.C.)*
1		2	3	4	5	6
ANDHRA PRADESH				*Ayacut*		
Major and medium schemes		24	2,122,500	3,554,500	5,092,900	1,109.4
Minor schemes		133	—	157,684	161,084	27.6
Small tanks and diversions		75	—	4,188	4,188	
	TOTAL	232	2,122,500	3,716,372	5,258,172	1,137.0
MADHYA PRADESH				*C.C.A.*		
Major and medium schemes		61	1,269,900	2,244,300	2,547,000	258.4
Minor schemes		422	—	729,861	594,561	143.9
Small tanks and diversions		23,131		2,004,700	1,077,700	
	TOTAL	23,164	1,269,900	4,936,561	4,219,261	402.3
MAHARASHTRA						
Major and medium schemes		59	438,200	3,951,300	4,310,600	426.0
Minor schemes		68	—	116,882	76,944	45.0
Small tanks and diversions		1,871	—	912,648	850,033	
	TOTAL	1,998	438,200	4,980,830	5,237,577	471.0
MYSORE				*Ayacut*		
Major and medium schemes		3	—	63,200	63,200	8.1
Minor schemes			—	61,000	49,500	19.8
Small tanks and diversions			—	61,000	49,500	
	TOTAL	3	—	185,200	162,200	27.9

ORISSA

Major and medium schemes	15	430,600	843,500	1,107,700	177.0
Minor schemes	9	—	12,600	12,600	16.9
Small tanks and diversions	38	—	190,250	190,250	
TOTAL	62	430,500	1,046,350	1,310,550	193.9
Total of major and medium schemes	156	4,261,100	10,656,800	13,121,400	1,978.9
Total of minor schemes	632		1,078,027	894,689	253.2
Total of small tanks and diversions	25,115		3,172,786	2,171,671	
GRAND TOTAL		4,261,100	14,907,613	16,187,760	2,232.1

I. INTRODUCTION

1.1 After a preliminary study of the nature and extent of irrigation developments, existing and proposed, in the Krishna and Godavari basins and after general discussions with the representatives of the State Governments concerned, the Commission decided to classify all schemes and projects into the following four groups :

(i) Major schemes to include all power projects and such other schemes as would each irrigate 50,000 acres or more annually;
(ii) Medium schemes—each intended to irrigate less than 50,000 acres annually but having an Ayacut or C.C.A. of not less than 5,000 acres ;
(iii) Minor schemes—each having an Ayacut or C.C.A. of less than 5,000 acres but not less than 500 acres; and
(iv) Small tanks and diversions—each having an Ayacut or C.C.A. of less than 500 acres.

1.2 A form was drawn to show in detail such particulars of schemes and projects as were relevant to the Commission's work and the State Governments were requested to furnish the requisite data for each major and medium scheme proposed on the Godavari River system. This form with explanatory note is shown in Section 2. It was, however, found that information sought by the Commission was not readily available with the State Governments; each State, therefore, set out to collect as much information as could be compiled in the time available.

Particulars of each major and medium projects, as obtained from the State Governments, are given in Section 3. These were shown in draft form first to the representatives of the State Governments concerned, for verification. After appropriate modifications had been made, the revised drafts were discussed in a joint meeting at which the Commission had the benefit of comments made and views expressed by the representatives of other States. This led to some further changes, which have all been incorporated in Section 3.

1.3 The significance of the index numbers, as given to each project in Section 3, is the same as explained in the Commission's Report.

1.4 Important particulars of all major and medium schemes arranged State-wise are given in Tables I and II. These include the proposed power generation, annual irrigation and annual diversion by each scheme.

1.5 Since each minor scheme utilizes but a small quantity of water, since the number of schemes is relatively large and since most of the particulars specified for the major and medium projects were not available for the minor schemes, the Commission decided to request the State Governments to furnish only a few important facts regarding each minor scheme. These have been presented in Tables III and IV.

1.6 As regards small tanks and diversions, even the particulars called for the minor schemes were not available for individual small tanks and diversions. It was, therefore, decided to collect some particulars regarding these small tanks and diversions, not by individual works, but collectively for all the small tanks and diversions in each district. Even this information was not wholly available. The information obtained is shown in Tables V and VI.

1.7 An abstract of all information available regarding minor schemes and small tanks and diversions is shown in Tables VII and VIII. These tables give the number of total schemes of this kind, district-wise, the areas proposed to be irrigated and the proposed annual diversion. The Commission have attempted to fill in the gaps in the data; the figures assumed are shown in brackets and suitable notes have been added to indicate the basis on which the assumptions have been made.

No records are available of the quantum of river supplies to be diverted by minor schemes or by small tanks and diversions. In order to get some idea of this quantum, the information contained in Table IX was collected from each State Government and was utilised in working out the annual diversions shown in Tables VII and VIII.

1.8 The total number of schemes in each State, the total area proposed to be irrigated, the total river supply proposed to be diverted and the total installed power capacity are shown in a statement in the beginning of the Annexure.

Section 2

General form
for
recording particulars of proposed schemes
with
explanatory notes

Name of scheme or system

Index Number
indicating serial number,
category of project, sub-basin
and State or States

1. Name of State

State or States benefitted by the scheme; if the scheme was in different State prior to re-organisation of States, also the name of that State

2. Scope of the scheme or system

Irrigation, hydro-electric or multi-purpose; if multi-purpose, all purposes are stated; whether based on flow or flow-cum-storage;

For irrigation schemes, acreage of C.C.A. or Ayacut is given;

For hydro-electric schemes, installed power in kW. is stated

3. Source of supply

Name of channel with name of place where diversion works are located, tributary and the river

Illustration : Sina at Sholapur/Bhima/Krishna

Upstream uses if any, existing and proposed

4. Description of the reservoir or tank

Live storage; dead storage; carry-over; annual reservoir losses; filling period; depletion period; catchment area; area submerged; full reservoir level; minimum pond level or dead storage level

If no canal takes off from the reservoir or tank :

type, length and height of dam; length and capacity of spillway; and number and capacity of outlets.

5. Description of the headworks

If a canal takes off above the dam, type, length and height of dam, length and capacity of spillway, number and capacity of outlets including particulars of head regulator of the canal

If the headworks consist of a weir, anicut or barrage, length of weir, anicut or barrage with discharging capacity; particulars of under-sluices and of head regulator of canal; minimum pond level, catchment area upstream of headworks.

6. Description of the canal(s)

Name of canal (contour or ridge); whether taking off on right or left; length of main canal (and of branches); perennial; one seasonal, or two seasonal lined or unlined; authorised capacity at head.

7. (a) Nature of investigations carried out up-to-date

(b) Actual or probable date of beginning of construction

8. Probable date of beginning of operation

IRRIGATION ASPECTS

9. Gross commanded area, culturable commanded area and Ayacut, district-wise

(i) In general; separate tables are prepared for each major canal;
(ii) Figures given are in thousand acres ;
(iii) Ayacut figures are not given for schemes in Madhya Pradesh and Maharashtra

Item	*Names of districts*			*Total*
	thousand acres			
G.C.A.				
C.C.A.				
Ayacut				

10. Area proposed to be irrigated annually and intensity of irrigation

Intensity of irrigation is worked out as percentage of area irrigated in season (*kharif, rabi abi, tabi,* hot weather *etc.*) on total C.C.A. in case of Madhya Pradesh and Maharashtra and on total Ayacut in case of Andhra Pradesh, Mysore and Orissa;

	Area proposed to be irrigated annually	*Intensity of irrigation*
(i) Perennial		
(ii) Two seasonal		
(iii) *Kharif*		
(iv) *Rabi*		
(v) Hot weather		
(vi) **Total**		

11. Normal rainfall and river supply proposed to be diverted

(i) If there is more than one canal separate tables are prepared for each major canal;
(ii) figures for column 2 are read from monthly Isohytel maps;
(iii) figures in column 3 and 4 are based on the sum-total of the rainfall figures for the month for all the stations in the commanded area divided by the number of stations ;
(iv) figures in column 6 represent

$$\frac{\text{average cusecs proposed to be diverted during the month}}{\text{authorised capacity of the canal}}$$

(v) figures in columns 2 to 4 are correct to first place of decimal and those in columns 5 and 6 to two places of decimal

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	........*inches*........			........*T.M.C.*.........	
June					
July					
—					
—					
April					
May					
Total					

12. **(a) Depth of sub-soil water table below ground level in the area proposed to be irrigated**

(b) Nature and extent of fluctuation in the water table

(c) Has any study been made of the likely effect of the introduction of irrigation on sub-soil water-table ?

Information is given only where data based on regular observations are available

13. **(a) Characteristics of soil(s) in the commanded area**

Results of scientific soil survey if carried out are given, otherwise general classification specifying soil texture with depth of soil crust

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

Information is given only where scientific studies have been made

14. **Existing pattern of cultivation in the area proposed to be irrigated**

(i) Paddy, wheat, sugarcane and cotton are specified individually; any other crop which covers more than 5 percent of the total cropped area is also specified; all other crops are grouped under 'others';

(ii) crop percentages are worked out on the 'Total cropped area' as given in the last column, and are correct to the first place of decimal.

Perennial			*Two seasonal*						*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	

15. **(a) Proposed pattern of irrigated cultivation**

   (i) Paddy, wheat, sugarcane and cotton are specified individually; any other crop which covers more than 5 percent of the total cropped area is also specified, all other crops are grouped under 'others';

   (ii) crop percentages are worked out on the 'Grand Total' as given in the last column, and are correct to the first place of decimal

Perennial			*Two seasonal*						*Grand Total (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	

(b) Are there any rules for regulating crop pattern ?

16. **Duty and Delta at canal head (as anticipated)**

Overall delta represents

$$\frac{\text{area proposed to be irrigated annually \textit{vide} item 10}}{\text{total annual river supply proposed to be diverted \textit{vide} item 11}}$$

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*

17. **(a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

It is specified whether area irrigated by tanks is included in or excluded from the C.C.A. or Ayacut of the project

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

It is specified whether the area irrigated by wells is included in or excluded from the C.C.A. or Ayacut of the project

18. Quantum of river supplies available in relation to withdrawals

Whether river supply data available; the period of the year in which flow supplies are adequate to meet irrigation requirements; numbers of days during which flow supplies are in excess of irrigation requirements and quantum of excess; period during which irrigation requirements are met wholly or partly from storage and quantum so obtained.

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Month	*Range of operation head (feet)*	*Supply (average) passing through turbines (cusecs)*
June		
July		
—		
—		
April		
May		
Total		**T.M.C.**

20. Proposed disposal of tail-race waters

Month	*Particulars*
June	
July	
—	
—	
April	
May	

21. Quantum of river supplies available in relation to withdrawals

Whether river supply data available; the period of the year in which flow supplies are adequate to meet power requirement; number of days during which flow supplies are in excess of power requirements; period of the year in which power requirements are met wholly or partly from storage and quantu so utilisedm.

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Aspects such as navigation, water supply for towns, supplies given for industrial uses are specified

23. Extent and type of area submerged by reservoir

Class of land (agricultural, forest or waste) that would be submerged, if the area lies outside the State, to what extent and in what State

24. Total cost of the scheme

25. Financial return of the scheme

Percentage of net return on the total capital outlay

26. Cost per acre irrigated

27. Cost per kW. power produced

28. Main features and purpose of the scheme

29. Special features of the scheme

This item is included only if there are special features not covered by items 1-28 above

Section 3

Particulars of Proposed major
and
medium projects referred to in III Plan
but
not yet approved for execution

GODAVARI CANALS PROJECT (POCHAMPAD) STAGE—I 1C.2-G.5-A.1

1. **Name of State** Andhra Pradesh (formerly in Hyderabad)
2. **Scope of the scheme or system**

   Irrigation scheme; based on flow; Ayacut 340,000 acres
3. **Source of supply**

   Godavari at Pochampad;
   considerable irrigation and power uses upstream, both existing and proposed
4. Not applicable
5. **Description of the headworks**

Anicut masonry :	2,500 feet long, with flanking bund 7,500 feet long on the left and 12,500 feet long on the right side, capacity 1,020,000 cusecs
Under sluices :	20 numbers, 8 feet × 12 feet each, total capacity 11,520 cusecs
Head regulator :	6 vents, 10 feet × 12 feet each
Catchment area :	35,425 square miles

6. **Description of the canal**

   Godavari South Canal (contour): right bank; 68 miles long (tail distributary has a head discharge of 2,084 cusecs); two seasonal; unlined; authorised capacity **4,260 cusecs**

7. (a) **Nature of investigations carried out up-to-date**	Project report ready
(b) **Actual or probable date of beginning of construction**	III Plan
8. **Probable date of beginning of operation**	1966

IRRIGATION ASPECTS

9. **Gross commanded area, culturable commanded area and Ayacut, district-wise**

Item	*Names of districts*		*Total*
	Nizamabad	*Karimnagar*	
	thousand acres		
G.C.A.	28.2	800.8	829.0
C.C.A.	24.3	550.4	574.7
Ayacut	14.6	325.4	340.0

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation on Ayacut*
Kharif (Abi)	300,000 acres	88.0 percent
Rabi	40,000 ,,	12.0 ,,
Total	**340,000 ,,**	**100.0 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	......*inches*......			....*T.M.C.*....	
June	6.0	15.4	1.6	10.00	0.91
July	11.9	20.0	0.3	11.40	1.00
August	7.6	16.5	1.9	11.40	1.00
September	7.0	18.2	0.6	11.00	1.00
October	3.5	15.5	0.1	8.00	0.70
November	1.1	3.8	0.1	7.90	0.72
December	0.1	1.1	0.2	4.75	0.42
January	0.2	1.7	Nil	0.70	0.06
February	1.1	7.0	,,	0.65	0 07
March	0.4	2.2	0.1	Nil	—
April	0.9	5.9	0.1	,,	—
May	0.6	3.5	0.1	,,	—
Total	**40.4**			**65.80**	

12. Not available

13.(a) Characteristics of soils in the commanded area

Mostly red soil overlying *moorum*

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif

Percentage of principal crops						*Total area (T. acres)*
Jowar	*Maize*	*Pulses*	*Groundnut*	*Gingilly*	*Others*	
33.0	17.5	26.4	5.9	10.3	6.9	285.3

54,700 acres mostly waste land

15.(a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Others*		
88.0	300.0	12.0	40.0	340.0

(b) **Are there any rules for regulating crop pattern?**

Wet and dry areas will be localised

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Kharif	*Rabi*	*Kharif*	*Rabi*	*Overall*
Paddy	*Dry crops*	*Paddy*	*Dry crops*	
75	150	4.9	1.6	4.4

17.(a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

692 tanks; with Ayacut 27,569 areas, excluded from Ayacut

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

4,772 wells; with Ayacut 3,436 acres, excluded from Ayacut

18. Quantum of river supplies available in relation to withdrawals

Adequate supplies exist at site to meet project requirements but this adequacy would also be governed by the requirements of an integrated basin-wide plan

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by anicut

15,206 acres (65 percent under dry cultivation and 10 percent under wet cultivation, rest waste land)

24.	**Total cost of the scheme**	Rs. 15,25 lakhs
25.	**Financial return of the scheme**	4.61 percent
26.	**Cost per acre irrigated**	Rs. 448
27.	Not applicable	

28. **Main features and purpose of the scheme**

Conversion of dry cultivation to irrigated agriculture (mostly paddy); development of Government waste lands

NALLAVAGU PROJECT

2C. 2-G. 9-A.2

1. **Name of State** Andhra Pradesh (formerly in Hyderabad)

2. **Scope of the scheme or system**

Irrigation scheme ; flow-cum-storage ; Ayacut 5,900 acres

3. **Source of supply**

Nallavagu near Sultanabad/Manjra/**Godavari**
Utilisation upstream:
existing : minor tanks
contemplated : nil

4. **Description of the reservoir or tank**

Live storage	0.69 T.M.C.
Dead storage	0.07 ,,
Carry-over	0.03 ,,
Annual reservoir losses	0.28 ,,
Filling period	June to September
Depletion period	October to April
Catchment area	111 square miles
Area submerged	1,510 acres
Full reservoir level	R.L. 1,493
Minimum pond level	R.L. 1,475

5. **Description of the headworks**

Dam: earthen, 5,229 feet long

Spillway: weir, 1,121 feet long, capacity 40,100 cusecs

Outlets: one vent, 2 feet × 2.5 feet, capacity 30 cusecs and two vents, 3 feet × 3.5 feet each, total capacity 126 cusecs

6. **Description of the canals**

Right Bank canal (contour) ; 20 miles long ; one seasonal ; unlined; authorised capacity **77 cusecs**

Left Bank Canal (contour) ; 16 miles long ; two seasonal ; unlined; authorised capacity **19 cusecs**

7. (a) **Nature of investigations carried out up-to-date** Project report ready
(b) **Actual or probable date of beginning of construction** III Plan

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area, culturable commanded area and Ayacut, district-wise

District	Medak	Medak and Nizamabad	Total
	Right Bank Canal	Left Bank Canal	
		..................thousand acres..........................	
G.C.A.	7.5	3.5	11.0
C.C.A.	6.2	3.2	9.4
Ayacut	4.1	1.8	5.9

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	Intensity of irrigation on Ayacut
Kharif		
Right Canal	4,100 acres	100.0 percent
Left Canal	1,000 ,,	55.6 ,,
Rabi		
Left Canal	1,100 ,,	61.1 ,,
Total Right Canal	4,100 ,,	100.0 ,,
Left Canal	2,100 ,,	116.7 ,,

11. Normal rainfall and river supply proposed to be diverted

Month	Rainfall			River supply proposed to be diverted		Capacity factor	
	Normal	Maximum	Minimum	Right Canal	Left Canal	Right Canal	Left Canal
1	2	3	4	5	6	7	8
	........inches........			..T.M.C...			
June	6.5	15.0	1.3	0.02	0 01	0.10	0.20
July	12.1	28.7	1.8	0.07	0.02	0.34	0.39
August	10.9	25.5	2.3	0.19	0.05	0.92	0.98
September	9.0	20.7	1.3	0.20	0.05	1.00	1.02
October	2.3	12.9	Nil	0.16	0.04	0.78	0.78
November	0.7	5.3	,,	0.03	0.02	0.15	0.41
December	0.1	1.4	,,	Nil	0.02	—	0.39
January	0.2	3.8	,,	,,	0.03	—	0.59
February	0.4	4.8	,,	,,	0.02	—	0.43
March	0.4	4.2	,,	,,	0.02	—	0.39
April	0.6	2.6	,,	,,	0.02	—	0.41
May	1.0	7.3	,,	,,	Nil	—	—
Total	**44.2**			**0.67**	**0.30**		

Total of both canals 0.97 T.M.C.

12. Not available

13. (a) Characteristics of soils in the commanded area

Black cotton soil in the head reach on left flank; sandy soil and *moorum* in the rest of the area

(b) Has any study been made of likely effect of the introduction of irrigation on soil characteristics?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif		*Rabi*				
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Total cropped area (T.acres)*
Others		*Wheat*	*Jowar*	*Maize*		
37.0	1.1	12.0	39.0	12.0	1.9	3.0

15. (a) Proposed pattern of irrigated cultivation

	Abi		*Rabi*			
	Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T.acres)*	*Grand Total (T. acres)*
	Paddy		*Paddy*	*Others*		
Left Canal	47.6	1.0	14.0	38.4	1.1	2.1
Right Canal	100.0	4.1	—	—	—	4.1

(b) Are there any rules for regulating crop pattern?

Wet and dry areas will be localised

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Abi	*Rabi*	*Abi*	*Rabi*	*Overall*
94	104	3.9	2.3	3.6

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

24 tanks, irrigating 524 acres, excluded from the Ayacut

(b) Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power ; water supply (month-wise), if any, required for these aspects ; financial-returns

Nil

23. Extent and type of area submerged by reservoir

1,510 acres (cultivated 1,070 acres, wet 77 acres, river bed and waste land 363 acres)

24.	**Total cost of the scheme**	Rs. 39 lakhs
25.	**Financial return of the scheme**	2.28 percent
26.	**Cost per acre irrigated**	Rs. 629

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture, reclamation of barren lands

SUDDAVAGU PROJECT

3C.2-G.5-A.3

1. **Name of State** Andhra Pradesh (formerly in Hyderabad)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; Ayacut 18,000 acres

3. **Source of supply**

Siddha river near Lingi/Godavari

Irrigation uses upstream : nil

4. **Description of the reservoir or tank**

Live storage	2.11 T.M.C.
Dead storage	0.26 „
Carry-over	0.23 „
Annual reservoir losses	0.79 „
Filling period	July to October
Depletion period	November to June
Catchment area	230 square miles
Area submerged	6,114 acres
Full reservoir level	R.L. 1,221
Minimum pond level	R.L. 1,199

5. **Description of the headworks**

Dam: earthen, 6,745 feet long, 63 feet high

Spillway: ogee weir, 755 feet long, capacity 90,000 cusecs

River sluices: nil

Head regulators: well type sluices on either flank, one vent, 5 feet×3 feet, capacity 90 cusecs and one vent, 3 feet×3 feet, capacity 54 cusecs

6. **Description of the canals**

Left Bank Canal (contour); 15 miles long; perennial; unlined; authorised capacity **84 cusecs**

Right Bank Canal (contour); 9 miles long; perennial; unlined; authorised capacity **51 cusecs**

7. (a) **Nature of investigations carried out up-to-date** Investigations in progress

(b) **Actual or probable date of beginning of construction** III Plan

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area, culturable commanded area and Ayacut, district-wise

District Adilabad

	Left Bank Canal	*Right Bank Canal*	*Total*
	....	*thousand acres*	....
G.C.A.	20.0	8.0	28.0
C.C.A.	16.0	6.4	22.4
Ayacut	N.A.	N.A.	18.0

10. Area proposed to be irrigated annually and intensity of irrigation (both canals)

	Area proposed to be irrigated	*Intensity of irrigation on Ayacut*
Perennial	5,000 acres	27.7 percent
Kharif	5,500 „	30.6 „
Rabi	7,500 „	41.7 „
Total	**18,000 „**	**100 0 „**

11. Normal rainfall and river supply proposed to be diverted (both canals)

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	....	*inches*	....	......*T.M.C.*......	
June	8.8	14.5	4.5	0.19	0.54
July	8.7	15.0	2.9	0.24	0.66
August	8.4	12.8	3.6	0.24	0.66
September	6.0	12.4	2.2	0.24	0.69
October	1.2	3.2	Nil	0.21	0.58
November	0.3	2.9	„	0.32	0.91
December	0.1	0.7	„	0.36	0.99
January	0.3	3.3	„	0.36	0.99
February	0.7	2.6	„	0.32	0.98
March	0.5	1.6	„	0.05	0.14
April	0.6	2.4	„	0.05	0.14
May	0.4	2.0	„	Nil	—
Total	**36.0**			**2.58**	

12. Not available

13.(a) Characteristics of soils in the commanded area Black cotton soil

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif			*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Jowar	*Others*		*Pulses*	*Oil seeds*		
46.0	16.0	7.8	22.0	16.0	4.8	12.6

15.(a) Proposed pattern of irrigated cultivation

Perennial			*Kharif*			*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugar-cane	*Garden*		*Paddy*	*Others*		*Paddy*	*Others*		
5.5	22.2	5.0	13.9	16.7	5.5	2.8	38.9	7.5	18.0

(b) Are there any rules for regulating crop pattern?

Perennial, wet and dry areas will be localised

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)						*Delta (feet)*						
Perennial		*Kharif*		*Rabi*		*Perennial*		*Kharif*		*Rabi*		
Sugar-cane	*Garden*	*Paddy*	*Others*	*Paddy*	*Others*	*Sugar-cane*	*Garden*	*Paddy*	*Others*	*Paddy*	*Others*	*Over-all*
90	120	75	240	60	150	7.3	4.5	4.8	1.0	4.7	1.6	3.3

17.(a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

6,114 acres, partly in Andhra Pradesh and partly in Maharashtra; other particulars not available

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture, reclamation of barren lands

BALIMELA/GUNTEWADA HYDRO-ELECTRIC PROJECT 4C.2-G.12-A.4/O.1

1. **Name of State** Andhra Pradesh and Orissa

2. **Scope of scheme or system**

Power scheme ; 4 units, 60,000 k.W. (one stand-by unit to be added later) in Orissa and 3 units, 60,000 k.W. in Andhra Pradesh at the site of Upper Sileru Power House (peaking station only).

3. **Source of supply**

Sileru at Balimela or Guntewada (site of upper sileru weir)/Sabari/**Godavari**

Utilisation upstream :

existing : Machkund hydro-electric project and minor irrigation schemes
proposed : Lower Machkund Project

4. **Description of the reservoir or tank (either at Balimela or Guntewada)**

	Balimela reservoir	Guntewada reservoir
Live storage	100.0 T.M.C.	100.0 T.M.C.
Dead storage	34.7 ,,	30.6 ,,
Carry-over	53.5 ,,	Nil
Annual reservoir losses	7.4 ,,	8.6 T.M.C.
Filling period	July to Oct.	July to Oct.
Depletion period	Nov. to June	Nov. to June
Catchment area	1,895 square miles	1,994 square miles
Area submerged	44,544 acres	47,280 acres (4,217 acres in Andhra Pradesh ; 43,063 acres in Orissa)
Full reservoir level	R.L. 1,516	R.L. 1,483
Minimum pond level	R.L. 1,440	R.L. 1,410

5. **Description of the headworks**

Dam :	earthern, 6,090 feet long, 200 feet high	partly masonry, partly composite and partly earthen ; 3,313 feet long, 187 feet high with 19,822 feet long dykes
Spillway :	masonry, 8 gates each 40 feet ×40 feet, total capacity 258,000 cusecs	ogee, 364 feet long with 7 gates 40 feet×40 feet each, total capacity 250,000 cusecs
River sluices :	4 numbers, 12 feet×8 feet each, one head race canal will take off from the Balimela Dam for generation of power at Balimela Power House	outlets : same as for Upper Sileru Project-Stage I

6. Description of the canal

Head race canal, 12,200 feet long; open channel plus tunnel 8,000 feet long, 22 feet diameter in case of Balimela reservoir, and in case of Guntewada reservoir same as under (3C.1-G.12-A.3)

7. (a) Nature of investigations carried out up-to-date

Detailed investigations for a dam and power house have been completed

(b) Actual or probable date of beginning of construction

The work on power portion has been taken up during 1961

8. Probable date of beginning of operation Power from 1966

9. to 18. Not applicable

POWER ASPECTS

19. River supply proposed to be diverted and operation head

	Balimela Power House	*Upper Sileru Power House*
Range of operation head	970—890 feet	310 feet
Supply passing through turbines ..	65.5 T.M.C. annual ; monthly distribution not available	65.5 T.M.C. annual; mean daily discharge of 2,075 cusecs (the power house will, however, operate for only about 4 hours daily)

20. Proposed disposal of tail-race waters

Balimela Power House	*Upper Sileru Power House*
tail-race waters will be let into Sabari and picked up for irrigation at Patteru ; other particulars not available	tail-race waters will be let into the Sileru river

21. Quantum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects ; financial returns

Further potential of about 40,000 k.W. (at 100 percent load factor) at the Guntewada dam or Balimela dam

23. Not available

24. Total cost of the scheme

Balimela	Guntewada
Not available	Rs. 9,61 lakhs

25. **Financial return of the scheme**

Balimela	Guntewada
Not available	9.48 percent in the 4th year of operation

26. Not applicable

27. **Cost per k.W. power produced**

Balimela	Guntewada
Not available	Rs. 535

28. **Main features and purpose of the scheme**	Power generation

MANDAMARI PROJECT

13C.2-G.5-A.5

1. **Name of State** Andhra Pradesh (formerly in Hyderabad)
2. **Scope of the scheme or system**

   Irrigation scheme ; flow-cum-storage ; Ayacut 6,000 acres
3. **Source of supply**

   Nallavagu at Mandamari/**Godavari**
   Utilisation upstream :
   existing : minor tanks only
   contemplated : nil
4. **Description of the reservoir or tank**

Live storage	0.77 T.M.C.
Dead storage	0.09 ,,
Carry-over	Nil
Annual reservoir losses	0.21 T.M.C.
Filling period	June to Oct.
Depletion period	Nov. to April
Catchment area	119 square miles
Area submerged	1,500 acres
Full reservoir level	R.L. 598
Minimum pond level	R.L. 571

5. **Description of the headworks**

   Dam : earthen on flanks and composite in river portion, 9,000 feet long, 40 feet high
   Spillway : 1,345 feet long, capacity 35,880 cusecs
   Outlets ; left bank, 2 vents, 3 feet×2 feet each, total capacity 72 cusecs ;
   right bank, 2 vents, 2 feet×2 feet each, total capacity 48 cusecs

6. **Description of the canals**

   Left Bank Canal (contour) ; 7.5 miles long ; two seasonal ; unlined ; authorised capacity **65 cusecs**

   Right Bank Canal (contour) ; 5.5 miles long ; two seasonal; unlined; authorised capacity **40 cusecs**

7. **(a) Nature of investigations carried out up-to-date**

   Present proposal based mainly on toposheet studies

   (b) Actual or probable date of beginning of construction III Plan

8. Not available

IRRIGATION ASPECTS·

9. Gross commanded area, culturable commanded area and Ayacut, district-wise

District Adilabad

	Left Bank Canal	*Right Bank Canal*	*Total*
	.... *thousand acres*..............		
G.C.A.	7.1	4.3	11.4
C.C.A.	5.7	3.5	9.2
Ayacut	3.7	2.3	6.0

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation on Ayacut*
Abi	6,000 acres	100.0 percent
Tabi	1,800 ,,	30.0 ,,
Total	**7,800** ,,	**130.0** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	......*inches*......			....*T.M.C.*....	
June	6.3	12·7	2.9	0.07	0.26
July	9.8	17.1	4.3	0.27	0.96
August	10.6	23.5	3.6	0.21	0.75
September	5.9	10.0	2.6	0.23	0.85
October	3.9	8.3	Nil	0.24	0.85
November	0.4	2.4	,,	0.05	0.18
December	0.1	1.2	,,	0.03	0.11
January	Nil	0.3	,,	0.10	0.36
February	0.5	2.7	,,	0.10	0.39
March	0.4	2.2	,,	0.11	0.39
April	0.8	2.0	,,	0.08	0.29
May	0.9	3.5	,,	Nil	—
Total	**39.6**			**1.49**	

12. Not available

13. (a) Characteristics of soils in the commanded area Sandy loams

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif			*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Jowar	*Others*		*Pulses*	*Oilseeds*		
46.0	16.0	2.6	22.0	16.0	1.6	4.2

15.(a) Proposed pattern of irrigated cultivation

Abi		*Tabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Paddy*		
76.9	6.0	23.1	1.8	7.8

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Abi	*Tabi*	*Abi*	*Tabi*	*Overall*
87	53	4.2	5.0	4.4

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

10 tanks, irrigating 567 acres, not included in the Ayacut

(b) Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

1,500 acres (dry lands), all in Andhra Pradesh

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

PEDDAVAGU PROJECT

1. **Name of State** Andhra Pradesh (formerly in Hyderabad)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; Ayacut 33,000 acres

3. **Source of supply**

Peddavagu at Ada/Pranhita/**Godavari**
Utilisation upstream both existing and proposed: nil

4. **Description of the reservoir or tank**

Live storage	5.74 T.M.C.
Dead storage	0.88 ,,
Carry-over	Nil
Annual reservoir losses	1.49 T.M.C.
Filling period	July to September
Depletion period	October to June
Catchment area	437 square miles
Area submerged	9,728 acres
Full reservoir level	R.L. 798
Minimum pond level	R.L. 730

5. **Description of the headworks**

Dam:	masonry, 240 feet long, 175 feet high with flanking earthen dam 3,330 feet long
Spillway:	capacity 188,400 cusecs
Outlets:	four vents, each 3.5 feet × 6 feet, total capacity 504 cusecs

6. **Description of the canal**

Peddavagu Canal (contour); left bank; 35.6 miles long; perennial; unlined; authorised capacity **485 cusecs**

7.(a) **Nature of investigations carried out up-to-date**

Field investigations completed, project report under preparation

(b) **Actual or probable date of beginning of construction** III Plan

8. **Probable date of beginning of operation** 3 years after beginning of construction

IRRIGATION ASPECTS

9. Gross commanded area, culturable commanded area and Ayacut, district-wise

District Adilabad

G.C.A.	53,100 acres
C.C.A.	42,600 ,,
Ayacut	33,000 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation on Ayacut*
Perennial	6,000 acres	18.2 percent
Abi	11,000 ,,	33.3 ,,
Rabi	16,000 ,,	48.5 ,,
Total	**33,000 ,,**	**100.0 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	........*inches*........			......*T.M.C.*......	
June	6.5	27.7	0.2	0.45	0.36
July	11.6	23.4	2.4	0.53	0.41
August	8.3	17.8	1.9	0.79	0.61
September	7.1	17.3	0.7	0.93	0.74
October	2.4	6.2	Nil	0.87	0.67
November	0.7	2.4	0.5	0.63	0.50
December	0.3	1.2	0.1	0.56	0.43
January	0.2	2.0	0.2	0.56	0.43
February	0.7	2.7	0.2	0.54	0.46
March	0.4	6.1	0.2	0.38	0.29
April	0.5	2.0	0.2	0.38	0.30
May	0.6	3.5	0.3	0.38	0.29
Total	**39.3**			**7.00**	

12. Not available

13.(a) Characteristics of soils in the commanded area Light black and loamy soils

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif		
Percentage of principal crops		*Total cropped area (T. acres)*
Jowar	*Others*	
84.0	16.0	26.7

15. Proposed pattern of irrigated cultivation

Perennial			*Abi*		*Rabi*				*Grand Total (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Sugar-cane	*Others*		*Paddy*		*Ginger*	*Tobacco*	*Others*		
13.4	4.8	6.0	33.3	11.0	21.0	18.8	8.7	16.0	33.0

(b) Are there any rules for regulating crop pattern ?

No, but wet, dry and perennial areas will be localised

16. Duty and Delta at canal head (an anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Abi*	*Rabi*	*Perennial*	*Abi*	*Rabi*	*Overall*
60	72	163	11.0	4.6	1.5	4.2

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

14 tanks, irrigating 450 acres, excluded from the Ayacut

(b) Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects ; financial returns

Water supply 1.44 T.M.C. (Asifabad 0.02 and Kagaz Nagar industries 1.42 T.M.C.); reduction of flood intensity

23. Extent and type of area submerged by reservoir

9,728 acres forest land, all in Andhra Pradesh

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

SATNALA PROJECT

15C.2-G.7-A.7

1. **Name of State** Andhra Pradesh (formerly in Hyderabad)

2. **Scope of the scheme or system**

   Irrigation scheme ; flow-cum-storage ; Ayacut 12,700 acres

3. **Source of supply**

   Satnala/Penganga/**Godavari**

   Utilisation upstream :

   existing and proposed : nil

4. **Description of the reservoir or tank**

Live storage	1.15 T.M.C.
Dead storage	0.12 ,,
Carry-over	0.27 ,,
Annual reservoir losses	0.37 ,,
Filling period	June to October
Depletion period	June to February
Catchment area	80 square miles
Area submerged	1,692 acres
Full reservoir level	R.L. 940
Minimum pond level	R.L. 914

5. **Description of the headworks**

Dam :	earthen, 5,850 feet long, 49 feet high
Spillway :	610 feet long, capacity 30,000 cusecs
Head regulators :	one sluice, 3.5 feet × 2 feet, capacity 42 cusecs; one sluice 4 feet × 2 feet, capacity 48 cusecs

6. **Description of the canals**

   Left Bank Canal (contour) ; 9 miles long ; two seasonal ; unlined ; authorised capacity **41 cusecs**

   Right Bank Canal (contour) ; 10 miles long ; two seasonal ; unlined ; authorised capacity **46 cusecs**

7. (a) **Nature of investigations carried out up-to-date** Investigations in progress

   (b) **Actual or probable date of beginning of construction** IV Plan

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area, culturable commanded area and Ayacut, district-wise

District Adilabad

	Left Bank Canal	*Right Bank Canal*	*Total*
	............*thousand acres*......	....	......
G.C.A.	11.5	12.4	23.9
C.C.A.	6.9	7.4	14.3
Ayacut	6.0	6.7	12.7

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation on Ayacut*
Perennial	500 acres	3.9 percent
Kharif	6,300 ,,	49.6 ,,
Rabi	5,900 ,,	46.5 ,,
Total	**12,700** ,,	**100.0** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*		*Capacity factor*	
	Normal	*Maximum*	*Minimum*	*Left Bank Canal*	*Right Bank Canal*	*Left Bank Canal*	*Right Bank Canal*
1	2	3	4	5	6	7	8
	........*inches*......	....	....	.....*T.M.C.*......	......		
June	5.4	10.1	2.1	0.02	0.02	0.19	0.17
July	13.6	16.7	9.0	0.02	0.03	0.18	0.24
August	9.6	17.0	3.4	0.05	0.05	0.45	0.41
September	8.8	13.4	3.7	0.05	0.06	0.47	0.50
October	2.3	8.2	Nil	0.06	0.07	0.55	0.57
November	0.8	4.7	,,	0.09	0.10	0.86	0.84
December	0.1	0.7	,,	0.05	0.06	0.45	0.49
January	0.1	0.9	,,	0.05	0.05	0.45	0.41
February	0.1	1.9	,,	0.03	0.04	0.30	0.36
March	0.2	0.9	,,	Nil	Nil	—	—
April	0.3	1.2	,,	,,	,,	—	—
May	0.9	4.5	,,	,,	,,	—	—
Total	**42.2**			**0.42**	**0.48**		

Total of both canals 0.90 T.M.C.

12. Not available

13. (a) Characteristics of soils in the commanded area Sandy loams

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif			*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Jowar	*Others*		*Pulses*	*Oil seeds*		
46.0	16.0	5.5	22.0	16.0	3.4	8.9

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*			*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Garden		*Paddy*	*Others*		*Pulses*		
3.9	0.5	14.2	35.4	6.3	46.5	5.9	12.7

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)				*Delta (feet)*				
Perennial Garden	*Kharif*		*Rabi*	*Perennial Garden*	*Kharif*		*Rabi*	*Overall*
	Paddy	*Others*			*Paddy*	*Others*		
200	65	282	140	2.4	5.8	0.9	1.6	1.6

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power ; water supply (monthwise), if any, required for these aspects ; financial returns

Nil

23. Extent and type of area submerged by reservoir

1,692 acres in Andhra Pradesh

24 .to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

KINNERSANI PROJECT

16C.2-G.10-A.8

1. Name of State Andhra Pradesh (formerly in Hyderabad)

2. Scope of the scheme or system

Irrigation scheme; flow-cum-storage; Ayacut 10,000 acres

3. Source of supply

Kinnersani at Yellambailu/Godavari
Utilisation upstream :
existing : nil
contemplated : nil

4. Description of the reservoir or tank

Live storage	...	8.40 T.M.C.
Dead storage	...	0.48 ,,
Carry-over	...	0.17 ,,
Annual reservoir losses	...	1.59 ,,
Filling period	...	June to December
Depletion period	...	January to May
Catchment area	...	515 square miles
Area submerged	...	6,490 acres
Full reservoir level	...	R. L. 407
Minimum pond level	...	R. L. 360

5. Description of the headworks

Dam :	masonry, 1,160 feet long, 84 feet high with flanking earthen dam of maximum height 122 feet
Spillway :	14 vents, each 40 feet × 20 feet, total capacity 1,50,000 cusecs and eight vents, each 10 feet × 10 feet, total capacity 51,884 cusecs
Head sluices :	two vents, each 5 feet × 6 feet, total capacity 360 cusecs; two vents, each 3 feet × 4 feet, total capacity 144 cusecs

6. Description of the canals

Left Bank Canal (contour); 16 miles long; one seasonal; unlined; authorised capacity **340 cusecs**

Right Bank Canal (contour); 6 miles long; perennial; unlined ; authorised capacity **136 cusecs** for water supply

7. (a) Nature of investigations carried out up-to-date

Sanction accorded to construction of storage and Right Bank Canal. Project report for Left Bank Canal under preparation

(b) Actual or probable date of beginning of construction 1961

8. Probable date of beginning of operation 1965

IRRIGATION ASPECTS

9. Gross commanded area, culturable commanded area and Ayacut, district-wise

District Khammam

G.C.A.	48,000	acres
C.C.A.	40,000	„
Ayacut	10,000	„

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation on Ayacut*
Abi	10,000 acres	100.0 percent

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*		*Capacity factor*	
	Normal	*Maximum*	*Minimum*	*Irrigation*	*Water supply*	*Irrigation*	*Water supply*
1	2	3	4	5	6	7	8
	........*inches*....			....*T.M.C.*......			
June	7.3	7.9	2.7	0.04	0.35	0.05	1.00
July	11.0	24.1	6.5	0.42	0.37	0.46	1.00
August	8.8	17.6	4.2	0.46	0.37	0.50	1.00
September	7.3	15.1	Nil	0.82	0.35	0.93	1.00
October	2.1	6.6	„	0.40	0.37	0.44	1.00
November	1.0	3.5	„	0.09	0.35	0.10	1.00
December	0.1	1.0	„	Nil	0.37	—	1.00
January	0.2	1.5	„	„	0.37	—	1.00
February	0.9	0.4	„	„	0.33	—	1.00
March	0.4	2.9	„	„	0.37	—	1.00
April	0.8	3.6	„	„	0.35	—	1.00
May	1.6	2.7	„	„	0.37	—	1.00
Total	**41.5**			**2.23**	**4.32**		
Total for both canals				**6.55 T.M.C.**			

12. Not available

13.(a) Characteristics of soils in the commanded area

Sandy loam and black loamy soil

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif					*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops				*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy	*Maize*	*Konda Jowar*	*Jowar*		*Tobacco*	*Others*		
1.7	0.8	1.6	85.0	5.8	2.7	8.2	0.7	6.5

15. (a) Proposed pattern of irrigated cultivation

Abi	
Percentage of principal crops	*Total area (T. acres)*
Paddy	
100.0	10.0

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)	*Delta (feet)*
Abi	*Abi*
64	5.1

17.(a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

24 tanks, irrigating 300 acres; not included in the Ayacut

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

24 wells; other particulars not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Water supply to (i) Fertiliser factory at Kottagudam

(ii) Thermal station

23. Extent and type of area submerged by reservoir

6,490 acres (mostly forest area)

24. Total cost of the scheme

Rs. 3,46 lakhs (including cost of Left Bank Canal)

25. Financial return of the scheme 1.7 percent

26. Cost per acre irrigated Rs. 759

27. Not applicable

28. Main features and purpose of the scheme

Provision of water supply for industries and conversion of rain-fed cultivation to irrigated agriculture

NARAINPUR PROJECT

5C.2-G.11-Ma.1

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

   Irrigation scheme; flow-cum-storage; C.C.A. 9,000 acres

3. **Source of supply**

   Nibra at Narainpur/Indravati/**Godavari**

   Utilisation upstream : nil

4. **Description of the reservoir or tank (tentative)**

Live storage	0.45 T.M.C.
Dead storage	0.05 ,,
Carry-over	Not available
Annual reservoir losses	0.08 T.M.C.
Filling period	June to September
Depletion period	July to February
Catchment area	27 square miles
Full reservoir level	Not yet determined
Minimum pond level	Not yet determined

5. **Description of the headworks** Not yet determined

6. **Description of the canals**

   Not yet determined; total authorised capacity for both canals **90 cusecs**

7.(a) **Nature of investigations carried out up-to-date** Field investigations in progress

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

District	Bastar
G.C.A.	15,000 acres
C.C.A.	9,000 ,,

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	6,500 acres	72.2 percent
Rabi	1,500 ,,	16.7 ,,
Total	**8,000 ,,**	**88.9 ,,**

11. Normal rainfall and river supply proposed to be diverted (both canals)

Month	*Rainfall*	*River supply proposed to be diverted*	*Capacity factor*
	Normal		
	...*inches*..	...*T.M.C.*...	
June	7.7	Nil	—
July	17.2	0.06	0.23
August	17.2	0.07	0.29
September	10.7	0.16	0.67
October	3.3	0.20	0.82
November	0.2	0.03	0.12
December	0.1	0.02	0.08
January	0.2	0.02	0.08
February	0.5	0.02	0.09
March	1.4	Nil	—
April	1.6	,,	—
May	1.5	,,	—
Total	**61.6**	**0.58**	

12.-13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif			*Rabi*		*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy	*Others*		*Others*		
90.2	7.5	4.4	2.3	0.1	4.5

In the absence of detailed agricultural statistics of the C.C.A. cultivated area assumed as 50 *percent of C.C.A. and crop pattern based on the crop statistics of the district as a whole*

15. Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Wheat*		
81.2	6.5	18.8	1.5	8.0

16. Duty and Delta at canal head (as anticipated)

Duty *(acres per mean cusec)*		*Delta* *(feet)*		
Kharif	*Rabi*	*Kharif*	*Rabi*	*Overall*
136	207	1.8	0.9	1.7

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture and increase in cultivated area

DEODHA PROJECT

6C.2-G.11-Ma.2

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 32,500 acres

3. **Source of supply**

Deodha near Kair Katta/Indravati/**Godavari**

No existing utilisation upstream, minor irrigation schemes, however, envisage irrigation of 3,000 acres.

4. **Description of the reservoir or tank**

Live storage	2.25 T.M.C.
Dead storage	0.11 „
Carry-over	Not available
Annual reservoir losses	0.05 T.M.C.
Filling period	June to September
Depletion period	July to June
Catchment area	26.4 square miles
Area submerged	4,020 acres
Full reservoir level	R. L. 1,142
Minimum pond level	R. L. 1,103

5. **Description of the headworks**

Dam : earthen, 2,500 feet long, 75 feet high

Spillway : capacity 25,760 cusecs, other particulars not available

Outlets : capacity 280 cusecs, other particulars not available

6. **Description of the canal**

Deodha Canal (initially contour, then ridge); right bank; 16 miles long; perennial; unlined; authorised capacity **280 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Under investigations by Dandakaranya Project authorities

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

District Bastar

G.C.A.	40,000 acres
C.C.A.	32,500 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	2,500 acres	7.7 percent
Kharif	20,000 ,,	61.5 ,,
Rabi	10,000 ,,	30.8 ,,
Total	**32,500** ,,	**100.0** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*...........			.........*T.M.C.*.........	
June	6.9	11.6	2.6	0.09	0.12
July	20.6	48.0	9.9	0.17	0.28
August	19.2	31.7	9.0	0.22	0.29
September	11.1	19.9	13.3	0.52	0.72
October	2.9	7.9	Nil	0.65	0.87
November	0.4	3.1	,,	0.13	0.18
December	Nil	Nil	,,	0.06	0.08
January	0.3	2.3	,,	0.10	0.13
February	0.6	4.5	,,	0.10	0.15
March	0.6	4.5	,,	0.13	0.17
April	1.0	4.6	,,	0.13	0.18
May	0.4	1.4	,,	0.13	0.17
Total	**64.0**			**2.43**	

12. Not available

13.(a) Characteristics of soils in the commanded area

Sandy loam 1 foot thick, over 1.5 to 2.0 feet thick clayey loam

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif			*Rabi*		*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy	*Others*		*Others*		
60.0	24.0	16.8	16.0	3.2	20.0

15.(a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*		
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Grand Total (T. acres)*
Sugarcane		*Paddy*		*Wheat*		
7.8	2.5	61.5	20.0	30.7	10.0	32.5

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
80	136	207	7.6	1.8	0.9	1.7

17.(a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

4,020 acres; forest area

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture and reclamation of new land for resettlement of displaced persons

UPPER WUNNA PROJECT

7C.2-G.8-M.1

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**
Irrigation scheme; flow-cum-storage; C.C.A. 9,000 acres

3. **Source of supply**
Wunna/Wardha/Wainganga/ Pranhita/**Godavari**
Utilisation upstream : nil

4. **Description of the reservoir or tank**

Live storage	1.07 T.M.C.
Dead storage	0.09 „
Carry-over	Nil „
Annual reservoir losses	0.20 T.M.C.
Filling period	1st July to end of September
Depletion period	1st July to 14 February
Catchment area	48 square miles
Area submerged	1,820 acres
Full reservoir level	R.L. 1,105
Minimum pond level	R.L. 1,081

5. **Description of the headworks**

Dam :	earthen, 5,400 feet long, 45 feet high
Spillway:	600 feet long, capacity 42,000 cusecs
Head regulator:	capacity 125 cusecs

6. **Discription of the canal**
Wunna Canal (contour); left bank; 13 miles long; two seasonal; unlined; authorised capacity **125 cusecs**

7. **(a) Nature of investigations carried out up-to-date**	Investigations in progress
(b) Actual or probable date of beginning of construction	III Plan

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

District Nagpur	
G.C.A.	15,000 acres
C.C.A.	9,600 „
Deduct existing well irrigation	600 „
Net C.C.A.	9,000 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	6,000 acres	66.7 percent
Rabi	4,000 ,,	44.4 ,,
Total	**10,000** ,,	**111.1** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*..........			..........*T.M.C.*......	
June	8.0	19.6	2.3		
July	13.2	22.2	6.4	1st Aug. to 14 Oct.	
August	11.0	17.7	6.2	0.33	0.25
September	7.8	14.8	1.3		
October	2.1	8.2	Nil		
November	0.7	3.8	,,	15th Oct. to 14th Feb.	
December	0.5	1.0	,,	0.46	0.35
January	0.5	3.7	,,		
February	0.5	6.2	,,		
March	0.5	4.1	,,		
April	0.5	3.7	,,	15th Feb. to 31st July	
May	0.8	4.0	,,	Nil	—
Total	**46.1**			**0.79**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Approximate classification : sandy to sandy loam 15 percent, silty loam to clay loam 65 percent and clay loam to clay 20 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Two seasonal*		
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Continued below*
Cane and Others		*Others*		
1.3	0.1	1.9	0.2	

Continued from above	*Kharif*						*Rabi*				*Total cropped area (T. acres)*
	Percentage of principal crops					*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
	Paddy	*Jowar*	*Pulses*	*Cotton*	*Others*		*Wheat*	*Linseed*	*Others*		
	0.4	41.3	10.8	1.3	18.3	6.9	15.3	6.7	2.7	2.4	9·6

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Wheat and Others*		
60.0	6.0	40.0	4.0	10.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at distributary head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Kharif paddy	200	400	1.2	0.6	1.8
Rabi wheat	—	150	—	1.6	1.6
Overall delta at canal head					1.8

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

200 small tanks, irrigating about 200 acres, excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

175 wells, each irrigating 2 acres of seasonal crops (say 400 acres), excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Culturable 730 acres, forests 730 acres, waste land 360 acres, entire submergence lies in Maharashtra

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

PENGANGA PROJECT

8C.2-G.7-M.2

1. Name of State

Maharashtra (formerly left bank in Madhya Pradesh and right bank in Hyderabad)

2. Scope of the scheme or system

Hydel scheme; flow-cum-storage ; power, 37,500 k.W. installed

3. Source of supply

Penganga near Takli/Wardha/Pranhita/**Godavari**

Considerable upstream utilisation proposed

15.2 T.M.C. of stored water is proposed to be diverted from Dongargaon Project **(98C.3-G.7-M.23)**

4. Description of the reservoir or tank

Live storage	...	6.00 T.M.C.
Dead storage	...	4.10 ,,
Carry-over	...	1.10 ,,
Annual reservoir losses	...	3.62 ,,
Filling period	...	15th June to end of October
Depletion period	...	1st July to 30th June
Catchment area	...	3,428 square miles
Area submerged	...	18,400 acres
Full reservoir level	...	R.L. 1,270
Minimum pond level	...	R.L. 1,260

5. Description of the headworks

Dam : earthen, 2.5 miles long, 70 feet high

Spillway : masonry, 4,200 feet long, capacity 410,000 cusecs

Outlet : head regulator, capacity 1,000 cusecs

6. Description of the canal

Hydel channel (off Takli storage); left bank; contour except for first four miles; 15 miles long upto Power House No. 2 including tunnel of about 1 mile; lined; authorised capacity **1,000 cusecs**

7. (a) Nature of investigations carried out up-to-date

Only preliminary project report ready; field investigations to be carried out

(b) Actual or probable date of beginning of construction 1962-63

8. Probable date of beginning of operation 1967-68

9. to 18. Not applicable

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Operation head		*Supply passing through turbines (cusecs)*
Power House No. 1 (feet)	*Power House No. 2 (feet)*	
225	129	800
	Annually	**25.23 T.M.C.**

20. Proposed disposal of tail-race waters

Will be let into the river

21. Quantum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Culturable 12,880 acres, forests 2,760 acres, waste land 2,760 acres, entire submergence lies in Maharashtra

24.-25. Not available

26. Not applicable

27. Not available

28. Main features and purpose of the scheme Power generation

29. Special features of the scheme

This project will come into full operation after Dongargaon Project **(98C.3-G.7-M.23)** is completed and a storage of 15.2 T.M.C. is made available to this project

PUS PROJECT

9C.2-G.7-M.3

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

   Irrigation scheme; flow-cum-storage; C.C.A. 43,600 acres

3. **Source of supply**

   Pus near Marsul/Penganga/**Godavari**

   Utilisation upstream : nil

4. **Description of the reservoir or tank**

Live storage	3.20 T.M.C.
Dead storage	0.40 „
Carry-over	1.30 „
Annual reservoir losses	0.50 „
Filling period	15th June to October
Depletion period	15th June to 14th June
Catchment area	235 square miles
Area submerged	2,200 acres
Full reservoir level	R.L. 1,303
Minimum pond level	R.L. 1,246

5. **Description of the headworks**

Dam :	earthen, 2,400 feet long, 150 feet high; subsidiary dam 1,525 feet long
Spillway :	712 feet long, capacity 107,000 cusecs
Outlets :	head regulators in left and right flanks, capacity 245 cusecs and 69 cusecs respectively

   Detailed designs of headworks to be worked out

6. **Description of the canals**

   Pus Left Bank Canal (contour); 14 miles long; perennial ; unlined; capacity **245 cusecs**

   Pus Right Bank Canal (contour); 11 miles long; perennial; unlined; capacity **69 cusecs**

7. (a)	**Nature of investigations carried out up-to-date**	Project report not ready
(b)	**Actual or probable date of beginning of construction**	III Plan

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Yeotmal

	Left Bank Canal	*Right Bank Canal*	*Total*
	..........*thousand acres*..................		
G.C.A.	48.7	13.7	62.4
C.C.A.	34.1	9.6	43.7
Deduct existing well irrigation			0.1
Net C.C.A.			43.6

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	2,000 acres	4.6 percent
Two seasonal	6,000 ,,	13.7 ,,
Long staple cotton	4,600 ,,	10.6 ,,
Kharif	6,200 ,,	14.4 ,,
Rabi	8,900 ,,	20.4 ,,
Green manure	8,400 ,,	19.2 ,,
Total	**36,500** ,,	**82.9** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
	.......*inches*......			....*T.M.C.*......	
June	6.0	17.8	0.6	15th June to 14th Oct.	
July	10.0	19.3	3.0		
August	8.0	14.9	2.3	1.20	0.38
September	7.0	14.0	0.5		
October	1.5	9.0	Nil		
November	0.7	11.2	,,	15th Oct. to 14th Feb.	
December	0.4	2.9	,,	1.20	0.38
January	0.4	3.0	,,		
February	0.4	3.6	,,		
March	0.4	3.9	,,	15th Feb. to 14th June	
April	0.4	7.9	,,		
May	0.6	3.8	,,	0.90	0.28
Total	**35.8**			**3.30**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 10 percent, silty loam to clay loam 40 percent and clay loam to clay 50 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*			*Kharif*					*Rabi*			
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T.acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Total cropped area (T. acres)*
Sugar-cane	*Others*		*Cotton*	*Others*		*Paddy*	*Jowar*	*Pulses*	*Others*		*Wheat*	*Others*		
0.1	1.0	0.5	36.4	0.7	16.2	2.3	38.0	10.8	5.7	24.8	3.9	1.1	2.2	43.7

15. (a) Proposed pattern of irrigated cultivation

Perennial			*Two seasonal*		*Long staple cotton*		*Kharif*			*Rabi*		
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Grand Total (T. acres)*
Sugar-cane	*Others*		*Others*		*Cotton*		*Green manure*	*Others*		*Jowar*		
3.9	1.7	2.0	16.7	6.0	12.8	4.6	23·2	17.2	14.6	24.5	8.9	36.1

(b) Are there any rules for regulating crop pattern?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributary head (as anticipated)

	Duty (acres per mean cusec)			*Delta (feet)*			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Sugarcane/plantains	80	70	50	3.1	3.5	4.8	11.4
Other perennials	120	100	75	2.0	2.5	3.2	7.7
Two seasonal	160	130	—	1.5	1.9	—	3.4
Long stapple cotton	400	—	100	0.6	—	2.4	3.0
Kharif	400	—	—	0.6	—	—	0.6
Rabi	—	200	—	—	1.2	—	1.2
Grean manure	400	—	—	0.6	—	—	0.6
Overall delta at canal head							2.1

17.(a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

56 wells, for supplementing water for seasonal crops, irrigation about 2 acres per well in one season, excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

2,200 acres (1,500 acres culturable, 600 acres forests, 100 acres waste lands) entirely within Maharashtra

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

BAGH RIVER PROJECT

10C.2-G.9-M.4

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 61,500 acres

3. **Source of supply**

Bagh/Wainganga/Pranhita/**Godavari**

Utilisation upstream: minor and medium schemes only

Madhya Pradesh has a proposal to treat this project as a joint project between Maharashtra and Madhya Pradesh **(See 30C.3-G.9-Ma.14)**

4. **Description of the dam and reservoir or tank**

Live storage	6.60 T.M.C.
Dead storage	0.60 „
Carry-over	Nil
Annual reservoir losses	1.70 T.M.C.
Filling period	15th June to 30th September
Depletion period	1st Aug. to 14th February
Catchment area	167 square miles
Area submerged	8,144 acres
Full reservoir level	R.L. 1,149
Minimum pond level	R.L. 1,112

Dam :	earthen, 3,450 feet long, 75 feet high, with dykes 6,410 feet long
Spillway :	masonry, 11 gates, 20 feet × 30 feet each, total capacity 91,000 cusecs
Outlet :	10 feet diameter, capacity 750 cusecs

5. **Description of the headworks**

Pick-up weir at Lohara: 750 feet long, capacity 116,800 cusecs

Head regulators : 5 gates, each 5 feet × 6 feet, capacity 300 cusecs each

Additional catchment area between reservoir and pick-up weir is 60 square miles, and the minimum pond level at the pick-up weir is R.L. 1,037

6. **Description of the canal**

Bagh Left Bank Canal (contour) ; 40 miles long; two-seasonal; unlined;authorised capacity **1,150 cusecs**

7. (a) **Nature and investigations carried out up-to-date**

Project report has been prepared, but may require modification in view of remarks against item 3 above

(b) **Actual or probable date of beginning of construction** III Plan

8. **Probable date of beginning of operation** 1966

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bhandara

G.C.A.	105,000 acres
C.C.A.	74,900 „
Deduct area under tanks and wells	13,400 „
Net C.C.A.	61,500 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif paddy	60,000 acres	97.6 percent
Rabi	50,000 „	81.3 „
Total	**110,000** „	**178.9** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	....	*inches*.........		.........*T.M.C*..........	
June	7.6	19.1	1.7	15th June to 14th Oct.	
July	19.8	35.1	8.5	3.52	0.29
August	23.7	37.5	4.0		
September	9.7	20.1	1.2		
October	2.6	12.1	Nil		
November	0.5	6.0	„	15th Oct. to 14th Feb.	
December	0.1	1.4	„	4.75	0.39
January	0.5	2.0	„		
February	1.0	4.5	„		
March	0.5	3.2	„	15 Feb. to 14th June	
April	0.7	5.8	„	Nil	—
May	0.4	1.7	„		
Total	**67.1**			**8.27**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 25 percent, silt loam to clay loam 45 percent and clay loam to clay 30 percent.

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Two seasonal*		*Kharif*			*Rabi*					
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*	*Total cropped area (T. acres)*
Sugarcane		*Others*		*Paddy*	*Others*		*Gram*	*Linseed*	*Wheat*	*Others*		
0.2	0.1	0.5	0.4	62.0	6.0	50.9	12.0	14.0	3.0	2.3	23.5	74.9

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*			
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Grand Total (T. acres)*
Paddy		*Wheat and Jowar*	*Gram*		
54.5	60.0	27.3	18.2	50.0	110.0

(b) Are there any rules for regulating crop pattern?

No, but sanctions will be regulated so as to conform to the proposed crop pattern

16. Duty and Delta at distributary head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	200	400	1.2	0.6	1.8
Wheat	—	150	—	1.6	1.6
Gram	—	400	—	0.6	0.6
Overall delta at canal head					1.7

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

700 small tanks, irrigating about 12,000 acres, excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

700 wells, each irrigating about 2 acres of seasonal crops, excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Details of submerged area S [illegible]e on Bagh River

	Maharashtra	*Madhya Pradesh*
Culturable	1,105 acres	1,618 acres
Forest	1,201 „	3,416 „
Waste	329 „	475 „
Total	**2,635** „	**5,509** „

24. Total cost of the scheme Rs. 6,10 lakhs

25. Financial return of the scheme 1.98 percent

26. Cost per acre irrigated Rs. 554

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture ; increase in intensity of cultivation

29. Special features of the scheme

During construction the following changes have been made in the design and scope of the project, as originally approved :

(a) The proposed pattern of cultivation has been revised as follows :

	Original	*Revised*
Perennial and two seasonal	7,200 acres	Nil
Kharif paddy	36,000 „	60,000 acres
Rabi	21,000 „	50,000 „
Hot weather	1,800 „	Nil
Total	**66,000** „	**110,000** „

(b) With the above changes, it is now proposed to divert 8.27 T.M.C instead of 7.59 T.M.C.

(c) The overall delta has been reduced from 2.6 feet to 1.7 feet.

ITIADOH PROJECT

11C.2-G.9-M.5

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 90,000 acres

3. **Source of supply**

Garvi/Wainganga/Pranhita/**Godavari**
Utilisation upstream: nil

4. **Description of the reservoir or tank**

Live storage	16.3 T.M.C.
Dead storage	0.8 ,,
Carry-over	Nil
Annual reservoir losses	3.0 T.M.C.
Filling period	June to September
Depletion period	June to 14th February
Catchment area	272 square miles
Area submerged	15,040 acres
Full reservoir level	R.L. 840
Minimum pond level	R.L. 792

5. **Description of the headworks**

Dam :	earthen, 1,975 feet long, 98 feet high
Spillway :	chute spillway on left flank, capacity 80,000 cusecs
Outlet :	capacity 660 cusecs

6. **Description of the canal**

Itiadoh Canal (contour); right bank; 76 miles long; two-seasonal; unlined; authorised capacity **1,740 cusecs**

7.(a) **Nature of investigations carried out up-to-date**

Preliminary investigations completed, project report ready

(b) **Actual or probable date of beginning of construction** III Plan

8. **Probable date of beginning of operation** 1966

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

Item	*Names of districts*		*Total*
	Bhandara	*Chanda*	
	...............*thousand acres*........................		
G.C.A.	136.0	46.0	182.0
C.C.A.	73.0	24.6	97.6
Deduct area under existing tanks and wells			7.6
Net C.C.A.			90.0

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif paddy	80,000 acres	88.9 percent
Rabi	54,000 ,,	60.0 ,,
Total	**134,000** ,,	**148.9** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	...........*inches*............			.........*T.M.C.*.........	
June	5.8	8.2	3.5	15th June to 14th Oct.	
July	20.2	30.4	13.2	5.10	0.28
August	14.1	19.0	6.1		
September	6.9	13.9	1.2		
October	1.9	4.6	Nil	15th Oct. to 14th Feb.	
November	Nil	Nil	,,	7.20	0.39
December	,,	,,	,,		
January	0.6	2.9	,,		
February	1.4	4.9	,,	15th Feb. to 14th June	
March	1.9	3.6	,,	Nil	—
April	1.0	2.9	0.5		
May	0.8	2.1	Nil		
Total	**54.6**			**12.30**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 20 percent, silty loam to clay 55 percent and clay loam to clay 25 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*		*Kharif*				*Rabi*				*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Sugar-cane	*Others*		*Chillies*		*Paddy*	*Pulses*	*Others*		*Wheat*	*Gram*	*Jowar*		
0.4	0.2	0.6	1.3	1.3	57.7	17.4	3.1	76.3	5.7	3.4	5.5	19.4	97.6

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Wheat*		
59.7	80.0	40.3	54.0	134.0

(b) Are there any rules for regulating crop pattern ?

No, but sanctions will be regulated so as to conform to the proposed crop pattern

16. Duty and Delta at distributary head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	200	400	1.2	0.6	1.8
Wheat	—	150	—	1.6	1.6
Overall delta at canal head					2.1

17.(a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

71 small tanks, irrigating 6,436 acres, excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

577 wells, each irrigating about 2 acres of seasonal crops, excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Culturable 4,370 acres, waste 530 acres; forest and other Government land 10,140 acres; entire area lies in Maharashtra

24. Total cost of the scheme Rs. 7,53 lakhs

25. Financial return of the scheme 2.47 percent

26. Cost per acre irrigated Rs. 506

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

29. Special features of the scheme

During construction the following changes have been made in the design and scope of the project, as originally approved:

(a) The proposed crop pattern has been revised as follows:

	Original	*Revised*
Perennial	8,000 acres	Nil
Two seasonal	2,000 „	„
Kharif (paddy)	50,000 „	80,000 acres
Rabi	35,000 „	54,000 „
Total	**95,000** „	**134,000** „

(b) The river supply now proposed to be diverted is 12.30 T.M.C. as against the earlier figure of 11.30 T.M.C.

(c) The overall delta has been reduced from 2.6 to 2.1 feet

12C.2-G.9 M.6.

DINA PROJECT

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**
Irrigation scheme ; flow-cum-storage ; C.C.A. 50,100 acres

3. **Source of supply**
Dina/Wainganga/Pranhita/Godavari
Utilisation upstream : nil

4. **Description of the reservoir or tank**

Live storage	1.98 T.M.C.
Dead storage	0.18 ,,
Carry-over	Nil
Annual reservoir losses	0.23 T.M.C.
Filling period	15th June to end of October
Depletion period	1st July to 14th February
Catchment area	74.5 square miles
Area submerged	3,400 acres
Full reservoir level	R.L. 754
Minimum pond level	R.L. 730

5. **Description of the headworks**
Dam : earthen, 10,700 feet long, 63 feet high
Spillway : 1,000 feet long, capacity 59,000 cusecs
Head regulator : one vent, 11 feet diameter, capacity 835 cusecs

6. **Description of the canal**
Dina Right Bank Canal ; 34 miles long; two-seasonal ; unlined ; authorised capacity **600 cusecs**

7. (a) **Nature of investigations carried out up-to-date**	Project report ready
(b) **Actual or probable date of beginning of construction**	III Plan
8. **Probable date of beginning of operation**	1964-65

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**
District Chanda

G.C.A.	77,600 acres
C.C.A.	58,600 ,,
Deduct area under wells and tanks	8,500 ,,
Net C.C.A.	50,100 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif (paddy)	22,400 acres	44.7 percent
Rabi (gram)	16,000 „	31.9 „
Total	**38,400 „**	**76.6 „**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*..........			......*T.M.C.*......	
June	6.5	8.9	4.0	15th June to 14th Oct.	
July	22.6	30.9	13.9	1.32	0.21
August	19.8	31.8	9.1		
September	9.6	16.0	4.4		
October	1.8	5.5	0.1	15th Oct. to 14th Feb.	
November	Nil	Nil	Nil	1.13	0.18
December	„	„	„		
January	0.5	2.3	„		
February	Nil	Nil	„	15th Feb. to 14th June	
March	„	„	„	Nil	—
April	„	„	„		
May	„	„	„		
Total	**60.8**			**2.45**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 20 percent, silt loam to clay loam 55 percent and clay loam to clay 25 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*		*Kharif*				*Rabi*				*Total croyped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*			*Total a (T. acres*	
Sugarcane	*Others*		*Chillies*		*Paddy*	*Pulses*	*Others*		*Jowar*	*Gram*	*Others*		
0.1	0.2	0.1	1.0	0.5	62.0	6.0	2.0	41.0	14.0	9.0	5.7	16.9	58.6

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Gram*		
58.5	22.4	41.5	16.0	38.4

(b) Are there any rules for regulating crop pattern ?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributary head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	200	400	1.2	0.6	1.8
Gram	—	400	—	0.6	0.6
Overall delta at canal head					1.5

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

614 small tanks irrigating about 8,270 acres, excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

100 wells, each irrigating about 2 acres, excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power ; water supply (month-wise), if any, required for these aspects ; financial returns

Nil

23. Extent and type of area submerged by reservoir

Culturable area 55 acres, forest area 3,349 acres; entire area lies in Maharashtra

24. Total cost of the scheme Rs. 2,44 lakhs

25. Financial return of the scheme 0.58 percent

26. Cost per acre irrigated Rs. 635

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

29. Special features of the schemes

During construction the following changes have been made in the design and scope of the project, as originally approved ;

Originally it was proposed to irrigate 40,900 acres including 1,500 acres of two seasonal crop and 3,000 acres of wheat. These two crops have been dropped. Kharif (paddy) has been reduced from 26,000 acres to 22,400 acres of longer duration variety and follow on gram in creased from 10,400 acres to 16,000 acres. Total area proposed to be irrigated is 38,400 acres. The capacity of the canal has been reduced from 800 cusecs to 600 cusecs.

There is, however, no change in the river supply proposed to be diverted.

KARANJWAN PROJECT—STAGE I 17C.2-G.1-M.7

1. **Name of State** Maharashtra (formerly in Bombay)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; additional C.C.A. 140,700 acres

3. **Source of supply**

(i) Kadwa at Karanjwan/**Godavari**

(ii) Kadwa at Palkhed/**Godavari**

Utilisation upstream : 1.4 T.M.C. by Kadwa river works (**17A-G.1-M.2**)

4. **Description of the reservoir or tank**

Live storage	5.50 T.M.C.
Dead storage	0.23 ,,
Carry-over	Nil
Annual reservoir losses	0.70 T.M.C.
Filling period	15th June to end of September
Depletion period	15th June to 14th February
Catchment area	96 square miles
Area submerged	4,370 acres
Full reservoir level	R.L. 2,126
Minimum pond level	R.L. 2,067

5. **Description of the headworks**

Existing Palkhed weir, as per **17A-G.1-M.2**

Outlets : new head regulator in left flank, capacity 970 cusecs

Right bank : no change

6. **Description of the canals**

Palkhed Left Bank Canal to be remodelled to carry **970 cusecs** (contour) ; 71 miles long ; two seasonal ; unlined

Palkhed Right Bank Canal— No change

7. (a) **Nature of investigations carried out up-to-date**

Field investigations completed, design work in hand

(b) **Actual or probable date of beginning of construction** III Plan

8. Not available

9. Gross commanded area and culturable commanded area, district-wise

District Nasik

	Palkhed Left Bank Canal	*Palkhed Right Bank Canal*	*Total*
	thousand acres		
G.G.A.	180.0	29.0	209.0
C.C.A.	144.0	23.0	167.0
Deduct C.C.A. under Palkhed Canals			26.3
Net C.C.A.			**140.7**

10. Area proposed to be irrigated annually and intensity of irrigation (Additional area excluding existing irrigation)

	Additional area proposed to be irrigated on Palkhed Canals	*Intensity of irrigation*
Kharif (paddy)	37,000 acres	26.4 percent
Rabi (wheat)	73,900 „	52.6 „
Total	**110,900** „	**79.0** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*		*Capacity factor (both canals)*
	Normal	*Maximum*	*Minimum*	*Left Bank Canal*	*Right Bank Canal*	
1	2	3	4	5	6	7
	inches			*T.M.C.*		
June	4.2	8.8	0.1	15th June to 14th Oct.		
July	4.6	10.5	1.2	5.8	1.3	0.75
August	3.3	7.0	0.4			
September	5.6	11.7	0.1			
October	2.2	8.3	Nil	15th Oct. to 14th Feb.		
November	0.9	0.1	„	6.0	1.3	0.77
December	0.2	1.4	„			
January	0.1	2.9	„			
February	0.1	10.3	„	15th Feb. to 14th June		
March	0.1	2.0	„	Nil	Nil	—
April	0.1	5.3	„			
May	0.8	3.1	„			
Total	**22.2**			**11.8**	**2.6**	
Total for both canal				**14.4 T.M.C.**		

12. — 13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*		*Kharif*					*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugar-cane	*Others*		*Others*		*Paddy*	*Bajri*	*Ground-nut*	*Others*		*Wheat*	*Others*		
1.7	7.8	16.0	5.5	9.0	0.9	36.8	7.0	7.4	87.0	24.9	8.0	55.0	167.0

15. Proposed pattern of irrigated cultivation (additional area)

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Wheat*		
33.3	37.0	66.7	73.9	110.9

(b) Are there any rules for regulating crop pattern ?

No; but sanctions will be regulated so as to conform to the proposed crop pattern

16. Duty and Delta at distributary head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Kharif paddy	65	400	3.7	0.6	4.3
Rabi wheat	—	150	—	1.8	1.8
Overall delta at canal head					3.0

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

500 wells, irrigating about 2 acres each, area included in the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

Based on gauging for 1941-42 to 1960-61 river supply will be adequate for requirements of both the canals in 11 out of 20 years

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Culturable	2,000 acres
Waste	1,370 ,,
Total	3,370 ,,

Entire submergence lies in Maharashtra

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

JAYAKWADI PROJECT—STAGE I 18C.2-G.1-M.8

1. **Name of State** Maharashtra (formerly in Hyderabad)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 62,900 acres

3. **Source of supply**

Sindphana at Manjalegaon/**Godavari**

Utilisation upstream : minor schemes only

4. **Description of the reservoir or tank**

Live storage	...	3.9 T.M.C.
Dead storage	...	1.2 „
Carry-over	...	0.5 „
Annual reservoir losses	...	1.5 „
Filling period	...	15th June to end of October
Depletion period	...	15th June to 14th June
Catchment area	...	1,441 square miles
Area submerged	...	10,900 acres
Full reservoir level	...	R.L. 1,397
Minimum pond level	..	R.L. 1,383

5. **Description of the head-works**

Dam : earthen, 17,000 feet long, 113 feet high

Spillway : masonry, capacity 362,200 cusecs

Outlet : right bank ; capacity 1,560 cusecs

6. **Description of the canal**

Manjalegaon Canal (contour); right bank ; 18 miles long ; perennial; unlined; authorised capacity **924 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Investigations completed ; project report under preparation

(b) **Actual or probable date of beginning of construction** III Plan

8. Not available

9. Gross commanded area and culturable commanded area, district-wise

District Bhir

G.C.A.	70,700 acres
C.C.A	63,600 ,,
Deduct area irrigated under wells	700 ,,
Net C.C.A.	62,900 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	3,100 acres	4.9 percent
Long staple cotton	5,000 ,,	8.0 ,,
Kharif (paddy)	36,500 ,,	58.0 ,,
Total	**44,600 ,,**	**70.9 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	........*inches*..........			....*T.M.C.*....	
June	5.5	10.7	Nil	15th June to 14th Oct.	
July	6.5	11.4	,,	5.9	0.39
August	5.5	9.5	0.3		
September	7.5	13.6	Nil		
October	1.8	7.6	,,	15th Oct. to 14th Feb.	
November	0.9	10.5	,,	1.7	0·17
December	0.3	1.6	,,		
January	0.3	2.5	,,		
February	0.2	1.0	,,	15th Feb. to 14th June	
March	0.2	1.1	,,	1.3	0.13
April	0.5	9.0	,,		
May	0.6	5.3	,,		
Total	**29.8**			**8.9**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to silty loam 10 percent, silty loam to clayey loam 30 percent and clayey loam to clay 60 percent

(b) Has any study been made of the likely effects of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated—

Perennial			*Two seasonal*			*Kharif*						*Rabi*				*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*					*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Sugarcane	*Others*		*Cotton*	*Others*		*Paddy*	*Pulses*	*Jowar*	*Groundnut*	*Others*		*Wheat*	*Jowar*	*Others*		
0.1	0.1	0.1	15.3	0.6	10.0	0.4	10.4	7.3	9.8	8.0	22.6	3.5	35.0	9.5	30.2	62.9

15. (a) Proposed pattern of irrigated cultivation

Perennial			*Kharif*		*Cotton long staple*		*Grand Total (T. acres)*
Percentage of principal crops		*Total area (T.acres)*	*Percentage of principal crops*	*Total area (T.acres)*	*Percentage*	*Total area (T. acres)*	
Sugarcane	*Plantains*		*Paddy*				
5.0	2.0	3.1	81.8	36.5	11.2	5.0	44·6

(b) Are there any rules for regulating crop pattern ?

No; but sanctions will be regulated so as to conform to the proposed crop pattern

16. Duty and Delta at distributary head (as anticipated)

	Duty (acres per mean cusec)			*Delta (feet)*			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Sugarcane or plantains	65	70	50	3.8	3.5	4.8	12.1
Paddy	80	400	—	3.0	0.6	—	3.6
Long staple cotton	300	—	100	0.8	—	2.4	3.2
Overall delta at canal head							4.5

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

About 340 wells capable of irrigating about 700 acres of seasonal crops; area under wells excluded from C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Culturable 9,800 acres, waste lands 1,100 acres, entire submergence lies in Maharashtra

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

GHIRNI PROJECT

19C.2-G.4-M.9

1. Name of State Maharashtra (formerly in Hyderabad)

2. Scope of the scheme or system

Irrigation scheme; flow-cum-storage; C.C.A. 16,100 acres

3. Source of supply

Ghirni near Jogial/Manjra/**Godavari**

Utilisation upstream: nil

4. Description of the reservoir or tank

Live storage	0.7 T.M.C.
Dead storage	0.1 ,,
Carry-over	Nil
Annual reservoir losses	0.1 T.M.C.
Filling period	15th June to October
Depletion period	15th June to 14th February
Catchment area	94 square miles
Area submerged	1,900 acres
Full reservoir level	R.L. 1,949
Minimum pond level	R.L. 1,936

5. Description of the headworks

Dam:	earthen, 8,000 feet long, 40 feet high
Spillway:	1,030 feet long, capacity 66,460 cusecs
Head regulator :	capacity 102 cusecs

6. Description of the canal

Ghirni Canal (contour); left bank; 30 miles long; two seasonal; unlined; capacity **102 cusecs**

7. (a) Nature of investigations carried out up-to-date Preliminary investigations in progress

(b) Actual or probable date of beginning of construction III Plan

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District	Osmanabad
G.C.A.	17,900 acres
C.C.A.	16,100 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Two seasonal	3,500 acres	21.8 percent
Kharif	3,400 "	21.1 „
Rabi	5,600 "	34.8 „
Total	**12,500** "	77.7 „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*..............			......*T.M.C.*.......	
June	5.5	18.5	0.9		
July	6.5	21.0	1.3	15th June to 14th Oct.	
August	5.7	21.8	3.4	0.5	0.46
September	7.5	17.7	0.8		
October	1.5	27.7	Nil		
November	0.8	7.0	„	15th Oct. to 14th Feb.	
December	0.3	0.8	„	0.6	0.55
January	0.3	1.1	„		
February	0.3	1.9	„		
March	0.2	2.8	„	15th Feb. to 14th June	
April	0.5	5.3	„	Nil	—
May	0.9	6.7	„		
Total	**30.0**			**1.1**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 20 percent, silty loam to clayey loam 35 percent and clay loam to clay 45 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on the soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Two seasonal*			*Kharif*							*Rabi*					*Total cropped area (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*						*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*	
Sugarcane		*Cotton*	*Others*		*Paddy*	*Pulses*	*Jowar*	*Groundnut*	*Oilseeds*	*Others*		*Wheat*	*Jowar*	*Gram*	*Others*		
0.3	0.1	16.2	2.5	3.0	3.7	24.2	7.5	12.4	9.3	2.5	9.6	2.5	5.6	5.0	1.2	2.3	15.0

15. (a) Proposed pattern of irrigated cultivation

Two seasonal		*Kharif*		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Cotton		*Jowar*		*Jowar*		
28.0	3.5	27.2	3.4	44.8	5.6	12.5

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*		
Kharif	*Rabi*	*Overall*	*Kharif*	*Rabi*	*Overall*
144	164	245	1.7	1.5	2.0

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

About 39 wells, supplementing water for seasonal crops, about 2 acres per well, included in C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data is not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

1,900 acres (1,700 acres culturable, 200 acres waste), all within Maharashtra

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

UPPER WARDHA PROJECT—STAGE I

20C.2-G.8-M.10

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 126,200 acres

3. **Source of supply**

Wardha at Karajgaon/Pranhita/**Godavari**

Utilisation upstream: existing and proposed: nil

4. **Description of the reservoir or tank**

Live storage	13.2 T.M.C.
Dead storage	3.0 ,,
Carry-over	1.8 ,,
Annual reservoir losses	3.2 ,,
Filling period	1st July to end of September
Depletion period	1st July to 30th June
Catchment area	1,562 square miles
Area submerged	14,720 acres
Full reservoir level	R.L. 1,134
Minimum pond level	R.L. 1,100

5. **Description of the headworks**

Dam : earthen, about 5,000 feet long, 110 feet high

Spillway : 590 feet long, capacity 276,400 cusecs

Outlet : head regulator, right bank, capacity 735 cusecs

6. **Description of the canal**

Upper Wardha Canal (contour); right bank; 62 miles long; perennial; unlined; capacity **735 cusecs**

7. (a) **Nature of investigations carried out up-to-date** Preliminary investigations in progress

(b) **Actual or probable date of beginning of construction** III Plan

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Amravati

G.C.A.	160,000	acres
C.C.A.	128,000	„
Deduct area irrigated under wells	1,800	„
Net C.C.A.	**126,200**	„

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	10,200 acres	8.1 percent
Two seasonal	20,400 „	16.2 „
Long staple cotton	20,400 „	16.2 „
Rabi	13,600 „	10.8 „
Hot weather	3,400 „	2.7 „
Total	**68,000** „	**54.0** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	inches	*inches*	*inches*	*T.M.C.*	
June	6.5	11.2	2.1	15th June to 14th Oct.	
July	10.5	19.3	3.2	3.80	0.47
August	7.8	14.8	1.6		
September	6.5	16.3	1.7		
October	1.8	8.8	Nil	15th Oct. to 14th Feb.	
November	0.8	4.7	„	5.00	0.61
December	0.5	1.7	„		
January	0.6	4.6	„		
February	0.5	5.2	„	15th Feb. to 14th June	
March	0.5	2.4	„	5.30	0.65
April	0.2	2.1	„		
May	0.7	2.6	„		
Total	**36.9**			**14.10**	

12. Not available

13. (a) **Characteristics of soils in the commanded area**

Sandy to sandy loam 15 percent, silty loam to clayey loam 30 percent and clayey loam to clay 55 percent

(b) **Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?**

No

14. **Existing pattern of cultivation in the area proposed to be irrigated**

Perennial		*Kharif*					*Rabi*		
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Total cropped area (T. acres)*
Others		*Jowar*	*Pulses*	*Cotton*	*Others*		*Others*		
0.5	0.6	32.0	10.0	48.0	5.0	122.6	4.5	5.8	128.0

15. **Proposed pattern of irrigated cultivation**

Perennial			*Two seasonal*		*Long staple cotton*		*Rabi*		*Hot weather*		
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Grand Total (T. acres)*
Sugarcane	*Others*		*Chillies*				*Wheat*		*Others*		
10.0	5.0	10.2	30.0	20.4	30.0	20.4	20.0	13.6	5.0	3.4	68.0

16. **Duty and Delta at distributary head (as anticipated)**

	Duty (acres per mean cusec)			*Delta (feet)*			*Total*
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	
Sugarcane or plantains	80	70	50	3.1	3.5	4.8	11.4
Oranges	120	100	75	2.0	2.5	3.2	7.7
Two seasonal	160	140	—	1.5	1.7	—	3.2
Long staple cotton	400	—	100	0.6	—	2.4	3.0
Wheat	—	150	—	—	1.6	—	1.6
Hot weather	—	—	100	—	—	2.4	2.4
Overall delta at canal head							4.8

17.(a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

Nil

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

900 wells, each irrigating about 2 acres (1,800 acres), area excluded from C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

The entire submergence lies in Maharashtra; culturable 10,000 acres, waste land 1,020 acres and forests 3,700 acres

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

KAYADHU PROJECT

21C.2-G.7-M.11

1. Name of State Maharashtra (formerly in Hydrabad)

2. Scope of the scheme or system

Irrigation scheme; flow-cum-storage; C.C.A. 74,700 acres

3. Source of supply

Kayadhu near Sapli/Penganga/Wardha/Pranhita/**Godavari**

Utilisation upstream: minor schemes only

4. Description of the reservoir or tank

Live storage	5.6 T.M.C.
Dead storage	1.1 ,,
Carry-over	0.6 ,,
Annual reservoir losses	1.5 ,,
Filling period	15th June to October
Depletion period	15th June to 14th June
Catchment area	631 square miles
Area submerged	9,600 acres
Full reservoir level	R.L. 1,414
Minimum pond level	R.L. 1,395

5. Description of the headworks

Dam : earthen, 9,000 feet long, 60 feet high
Spillway : capacity 175,000 cusecs
Outlets : two head regulators

6. Description of the canals

Kayadhu Left Bank Canal (contour); 15.5 miles long; perennial; unlined; authorised capacity **175 cusecs**

Kayadhu Right Bank Canal (contour); 70 miles long; perennial; unlined, authorised capacity **795 cusecs**

7.(a) Nature of investigations carried out up-to-date

Preliminary investigations nearing completion, project report not ready

(b) Actual or probable date of beginning of construction III Plan

8. Probable date of beginning of operation 1970

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

Districts	*Left Bank Canal*		*Right Bank Canal*		*Total*
	Parbhani	*Nanded*	*Parbhani*	*Nanded*	
	. . . . .thousand acres.				
G.C.A.	6.8	12.7	8.4	55.7	83.6
C.C.A.	6.1	11.5	7.6	50.1	75.3
Deduct existing well irrigation					0.6
Net C.C.A.					74.7

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	3,200 acres	4.3 percent
Two seasonal	5,300 ,,	7.1 ,,
Long staple cotton	9,300 ,,	12.4 ,,
Paddy	18,000 ,,	24.1 ,,
Green manure	13,000 ,,	17.4 ,,
Rabi	31,000 ,,	41.5 ,,
Total	**79,800** ,,	**106.8** ,,

11. Normal rainfall and river supply proposed to be diverted (both canals)

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	. . . . .inches.			*. . . . . .T.M.C. . . . .*	
June	7.0	13.4	Nil		
July	13.0	19.0	,,	From 15th June to 14th Oct.	
August	8.5	15.7	,,	2.40	0.23
September	8.0	19.2	,,		
October	1.5	4.9	,,		
November	0.6	7.6	,,	From 15th Oct. to 14th Feb.	
December	0.3	2.3	,,	2.90	0.28
January	0.3	7.9	,,		
February	0.4	4.4	,,		
March	0.4	1.4	,,	From 15th Feb. to 14th June	
April	0.4	2.8	,,	1.90	0.19
May	0.6	8.2	,,		
Total	**41.1**			7.20	

12. Not available

13. (a) **Characteristics of soils in the commanded area**

Sandy to sandy loam 15 percent, silty loam to clay loam 40 percent and clay loam to clay 45 percent

(b) **Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?**

No

14. **Existing pattern of cultivation in the area proposed to be irrigated**

Perennial			*Two seasonal*			*Kharif*					*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane	*Others*		*Cotton*	*Others*		*Paddy*	*Jowar*	*Pulses*	*Others*		*Wheat*	*Others*		
0.3	0.3	0.4	34.5	0.4	26.3	2.8	41.2	11.4	2.0	43.2	2.5	4.6	5.4	75.3

15.(a) **Proposed pattern of irrigated cultivation**

Perennial			*Two seasonal*		*Long staple cotton*		*Kharif*			*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane Plantains	*Others*		*Others*				*Paddy*	*Green manure*		*Jowar*	*Gram*		
2.5	1.5	3.2	6.6	5.3	11.6	9.3	22.6	16.3	31.0	16.3	22.6	31.0	79.8

(b) **Are there any rules for regulating crop pattern ?**

No, but sanctions will be regulated so as to conform to the proposed crop pattern

16. **Duty and Delta at distributary head (as anticipated)**

	Duty (acres per mean cusec)			*Delta (feet)*			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Sugarcane	100	70	50	2.4	3.4	4.8	10.6
Other perennial	150	105	75	1.6	2.4	3.3	7.3
Two seasonal	300	140	—	0.8	2.0	—	2.8
Paddy	150	400	—	1.6	0.6	—	2.2
Jowar	—	200	—	—	1.2	—	1.2
Cotton long stapple			100	—	—	2.4	2.4
Gram	—	400	—	—	0.6	—	0.6
Overall delta at canal head							2.1

17. (a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

Nil

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

304 wells, capable of irrigating 2 acres per well, area excluded from C.C.A.

18. Quantum of river supplies available in relation to withdrawals
River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects, financial returns
Nil

23. Extent and type of area submerged by reservoir
10,200 acres (culturable 200 acres, forests 1,000 acres and waste 9,000 acres) in Maharashtra

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme
Conversion of rain-fed cultivation to irrigated agriculture

KUNI PROJECT

22C.2-G.7-M.12

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum storage, C.C.A. 17,400 acres

3. **Source of supply**

Kuni/Penganga/**Godavari**

Utilisation upstream : nil

4. **Description of the reservoir or tank**

Live storage	3.4 T.M.C.
Dead storage	0.3 ,,
Carry-over	0.3 ,,
Annual reservoir losses	0.8 ,,
Filling period	15th June to end of October
Depletion period	15th June to 14th June
Catchment area	184 square miles
Area submerged	4,200 acres
Full reservoir level	R.L. 899
Minimum pond level	R.L. 865

5. **Description of the headworks**

Dam : earthen, 7,200 feet long, 68 feet high

Spillway : capacity 94,100 cusecs

Outlets : two head regulators

6. **Description of the canals**

Kuni Right Bank Canal (contour); 23 miles long; perennial; unlined; authorised capacity **88 cusecs**

Kuni Left Bank Canal (contour); 32 miles long; perennial; unlined; authorised capacity **134 cusecs**

7. (a) **Nature of investigations carried out up-to-date** Preliminary investigations in progress

(b) **Actual or probable date of beginning of construction** III Plan

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Yeotmal

G.C.A.	25,100	acres
C.C.A.	17,500	,,
Deduct area under tanks and wells	100	,,
Net C.C.A	17,400	,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	2,400 acres	13.8 percent
Two seasonal	1,500 ,,	8.6 ,,
Cotton long staple	2,100 ,,	12.0 ,,
Paddy	5,200 ,,	29.9 ,,
Rabi	3,700 ,,	21.3 ,,
Total	**14,900** ,,	**85.6** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	................*inches*....................			......*T.M.C.*......	
June	6.0	23.9	0.6	From 15th June to 14th Oct.	
July	14.0	29.7	2.9		
August	10.5	20.5	2.9	0.60	0.26
September	7.5	28.1	0.4		
October	1.7	11.0	Nil	From 15th Oct. to 14th Feb.	
November	0.6	7.4	,,		
December	0.4	13.6	,,	0.80	0.32
January	0.4	3.4	,,		
February	0.4	3.2	,,	From 15th Feb. to 14th June	
March	0.5	3.8	,,		
April	0.4	5.6	,,	0.70	0.28
May	0.6	5.7	,,		
Total	**43.0**			**2.10**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 15 percent, silty loam to clay loam 40 percent and clay loam to caly 45 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Two seasonal*			*Kharif*					*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Others		*Cotton*	*Others*		*Paddy*	*Jowar*	*Others*	*Pulses*		*Wheat*	*Gram*		
0.8	0.2	38.0	0.8	6.8	1.3	36.1	5.7	12.1	10.0	3.0	0.2	0.5	17.5

15. (a) Proposed pattern of irrigated cultivation

Perennial			*Two seasonal*		*Kharif*		*Rabi*			*Hot weather*		*Grand Total (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. aeres*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres*	
Sugar-cane	*Others*		*Others*		*Paddy*		*Jowar*	*Gram*		*Cotton long staple*		
6.9	5.9	2.4	8.6	1.5	29.6	5.2	14.2	5.9	3.7	12.0	2.1	14.9

(b) Are there any rules for regulating crop pattern ?

Not, but sanctions will be regulated so as to conform to the proposed crop pattern

16. Duty and Delta at distributary head (as anticipated)

	Duty (acres per mean cusec)			*Delta (feet)*			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Sugarcane	150	70	50	1.6	3.5	4.9	11·0
Other perennial	150	100	75	1.6	2.5	3.2	7.3
Two seasonal	300	130	—	0.8	1.9	—	2.7
Cotton long staple	—	—	100	—	—	2.4	2.4
Paddy	150	400	—	1.6	0.6	—	2.2
Jowar	—	200	—	—	1.2	—	1.2
Gram	—	400	—	—	0.6	—	0.6
Overall delta at canal head—							3.2

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

38 wells, each irrigating about 2 acres seasonal crops, excluded from C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

The entire submergence lies in Maharashtra (culturable 2,900 acres forest 900 acres and waste 400 acres)

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

सत्यमेव जयते

Section 3

Particulars
of
Proposed major and medium projects not included in III Plan

सत्यमेव जयते

GODAVARI CANALS PROJECT (POCHAMPAD)—STAGE II 1C.3-G.5-A.1

1. **Name of State** Andhra Pradesh (formerly in Hyderabad)

2. **Scope of the scheme or system**

Multi-purpose scheme; flow-cum-storage; irrigation, additional Ayacut 1,555,000 acres; power, 128,500 k.W. installed

3. **Source of supply**

Godavari at Pochampad

Considerable uses upstream, both existing and proposed

4. **Description of the reservoir or tank**

The anicut proposed under **1C.2-G.5-A.1** to be raised to the following particulars :

Live storage	100.15 T.M.C.
Dead storage	21.42 ,,
Carry-over	Nil
Annual reservoir losses	18.13 T.M.C.
Filling period	16th July to 15th October
Depletion period	16th October to 15th July
Catchment area	35,425 square miles
Area submerged	111,936 acres
Full reservoir level	R.L. 1,093
Dead storage level	R.L. 1,058

5. **Description of the headworks**

Dam : masonry, spillway section 1,910 feet long, non-spillway section 590 feet long, 123 feet high; earthen flanks, right 19,250 feet long and left 22,100 feet long, 126 feet high

Spillway : masonry, 1,910 feet long, 32 gates, 50 feet × 30 feet each, total capacity 1,009,000 cusecs

Outlets : (i) 20 river sluices, 8 feet × 12 feet each, total capacity 113,400 cusecs;
(ii) right head sluices, 5 vents, 10 feet × 12 feet each;
(iii) penstocks, 3 numbers, 28 feet diameter, total capacity 18,450 cusecs;
(iv) left head sluices, 2 vents, each 10 feet × 12 feet;
(v) penstocks, 2 numbers, 10 feet diameter each, total capacity 1,440 cusecs

6. **Description of the canals**

Godavari South canal to be remodelled to the following data :

contour; 251 miles long; perennial upto 155 miles; lined upto 155 miles; authorised capacity **17,290 cusecs**

Godavari North Canal (contour); 117.5 miles long; perennial; lined for first 38 miles and then unlined; authorised capacity **1,400 cusecs** for 38 miles and **2,500 cusecs** below this point; (Kaddam Canal—**2B-G.5-A.2** will be merged with the new canal)

7. **(a) Nature of investigations carried out up-to-date**	Project report ready
(b) Actual or probable date of beginning of construction	IV Plan
8.	Not available

IRRIGATION ASPECTS

9. Gross commanded area, culturable commanded area and Ayacut, district-wise

Item		*Names of districts*					*Total*
		Nizamabad	*Karimnagar*	*Warangal*	*Nalgonda*	*Khammam*	
		thousand acres					
South Canal:	G.C.A.	30.2	1,100.3	1,188.8	934.6	649.5	3,903.4
	C.C.A.	24.3	886.6	957.2	753.9	523.3	3,145.3
	Ayacut	13.9	510.5	547.5	433.9	300.2	1,806.0

Item		*Name of district*	*Total*	*Grand Total (both canals)*
		Adilabad		
		thousand acres		
North Canal:	G.C.A.	387.0	387.0	4,290.4
	C.C.A.	219.0	219.0	3,364.3
	Ayacut	154.0	154.0	1,960.0

Total Ayacut	1,960,000 acres
Deduct Ayacut under Stage I **1C.2-G.5-A.1**	340,000 ,,
Deduct Ayacut under **2B-G.5-A.2**	65,000 ,,
Additional Ayacut	1,555,000 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	South Canal		*North Canal*	
	Area proposed to be irrigated	*Intensity of irrigation on Ayacut*	*Area proposed to be irrigated*	*Intensity of irrigation on Ayacut*
	thousand acres	*percentage*	*thousand acres*	*percentage*
Perennial	160.0	8.9	60.0	39.0
Kharif	1,230.0	68.1	56.0	36.3
Rabi	452.0	25.0	60.0	39.0
Total	**1,842.0**	**102.0**	**176.0**	**114.3**

Total irrigation ...	2,018,000 acres
Deduct irrigation under Stage I and Kaddam Canal	425,000 ,,
Additional irrigation ...	1,593,000 ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*		*Capacity factor*	
	Normal	*Maximum*	*Minimum*	*South Canal*	*North Canal*	*South Canal*	*North Canal*
1	2	3	4	5	6	7	8
	........*inches*......			............*T.M.C.*..........			
June	5.9	13.2	1·2	10.90	3.00	0.24	0.83
July	9.6	19.4	0.5	35.40	3.50	0.76	0.93
August	7.2	17.2	0.9	46.20	3.60	1.00	0.96
September	7.0	19.3	0.3	42.10	3.50	0.94	0.96
October	2.8	10.0	0.1	43.00	3.30	0.93	0.88
November	1.0	4.7	0.1	38.30	3.40	0.85	0.94
December	0.2	1.8	0.1	23.30	2.90	0.50	0.77
January	0.3	2.4	Nil	12.60	3.00	0.27	0.80
February	0.6	5.5	0.1	6.60	2.80	0.16	0.83
March	0.5	3.4	0.1	5.20	2.50	0.11	0.67
April	0.9	6.8	0.1	5.50	2.80	0.12	0.77
May	0.9	5.5	0.1	5.10	2.70	0.11	0.72
Total	**36.9**			**274.20**	**37.00**		

Total diversion by both canals	**311.20**	**T.M.C.**
Deduct diversion proposed under Stage I	65.80	,,
Deduct diversion proposed under Kaddam **2B-G.5-A.2**	16.20	,,
Additional diversion	**229.20**	,,

12. Not available

13. (a) Characteristics of soils in the commanded area Mostly red

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif					*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops				*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Jowar	*Maize*	*Pulses*	*Groundnut*		*Gingally*	*Others*		
33.0	17.5	26.4	5.8	885.0	10.2	7.1	185.0	1,070.0

Information about the rest of the Ayacut not available; 18 to 33 percent is, however, Government waste lands

15. (a) Proposed pattern of irrigated cultivation

	Perennial			*Kharif*					*Rabi*			
	Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Grand Total (T. acres*
	Sugar-cane	*Garden others*		*Paddy*	*Oil seeds*	*Ground-nut*	*Others*		*Paddy*	*Others*		
South Canal	2.2	6.5	160.0	40.0	8.2	8.2	10.4	1,230.0	2.7	21.8	452.0	1,842.0
North Canal	17.0	17.1	60.0	31.8	—	—	—	56.0	17.0	17.1	60.0	176.0

(b) Are there any rules for regulating crop pattern?

Perennial and wet areas will be localised

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)						*Delta (feet)*					
Perennial		*Kharif*		*Rabi*		*Perennial*		*Kharif*		*Rabi*	
Sugar-cane	*Garden*	*Paddy*	*Others*	*Paddy*	*Others*	*Sugar-cane*	*Garden*	*Paddy*	*Others*	*Paddy*	*Others*
67	110	75	150	50	150	10.8	4.4	4.7	1.8	4.8	1.6

Overall delta	South canal	3.5 feet
	North canal	5.5 feet

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

692 tanks, irrigating 27,569 acres upto mile 68 of South Canal, not included in the Ayacut. Information regarding the rest of the area not available

(b) Not available

18. Quantum of river supplies available in relation to withdrawals

Adequacy or otherwise of river supplies for this project would be governed by the requirements of an integrated basin-wide plan

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Power houses at the head of each of the two canals

Month	*Range of operation head (feet)*	*Supply passing through turbines (cusecs)*
June	40	5,370
July	30	14,550
August	35	18,600
September	52	17,550
October	60	17,300
November	61	16,100
December	61	9,800
January	61	6,200
February	61	3,900
March	61	2,875
April	57	3,200
May	53	2,920
Total		**311.20 T.M.C.**

20. Proposed disposal of tail-race waters

The tail-race waters will be diverted for irrigation under the two canals

21. Quantum of river supplies available in relation to withdrawals

As per item 18 above

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Area submerged 111,936 acres (74.88 percent of submergence is taken as culturable area of which 64.61 percent is under dry cultivation and 10.28 percent under wet cultivation)

The entire submergence lies in Andhra Pradesh

24. Total cost of the scheme	Rs. 117,35 lakhs (1958)
25. Financial return of the scheme	4.22 percent
26. Cost per acre irrigated	Rs. 567
27. Cost per kW. power produced	Rs. 875

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture, power generation, reclamation of Government waste lands

29. Special features of the scheme

The power to be generated will vary enormously during the year, the firm power being about one sixth of the maximum

67 precent of the Ayacut lies outside the drainage basin of the Godavari

GODAVARI CANALS PROJECT (POCHAMPAD)—STAGE III 2C.3-G.5-A.2

1. **Name of State** Andhra Pradesh (formerly in Hyderabad)

2. **Scope of the scheme or system**

Multi-purpose scheme; flow-cum-storage; additional Ayacut 100,000 acres on South Canal only

3. **Source of supply**

Godavari at Pochampad

Considerable uses upstream, both existing and proposed

4. **Description of the reservoir or tank**

Same as for Godavari Canals Project—Stage II, (**See 1C.3-G.5-A.1**) except that the Annual reservoir losses will be 14.77 T.M.C.

5. **Description of the headworks**

Same as under Stage II, except for 4 additional vents, 10 feet × 12 feet each, for the right head sluice

6. **Description of the canals**

Same as under Stage II, except that the capacity of the South Canal will be increased from **17,290 to 31,000 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

No further investigation is required

(b) **Actual or probable date of beginning of construction** V Plan

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area, culturable commanded area and Ayacut, district-wise**

Item	*Names of districts*					*Total*
	Nizamabad	*Karimnagar*	*Warangal*	*Nalgonda*	*Khamam*	
			thousand acres			
South Canal						
G.C.A.	Same as under Stage II					
C.C.A.	—do—					
Ayacut	14.7	539.0	577.5	458.0	316.8	1,906.0
Deduct Ayacut under Stage II						1,806.0
Additional Ayacut						100.0
North Canal	Same as under Stage II					

10. Area proposed to be irrigated annually and intensity of irrigation

South Canal

	Area proposed to be irrigated	*Intensity of irrigation on Ayacut*
Perennial	160,000 acres	8.4 percent
Abi	1,732,000 „	90.9 „
Tabi	250,000 „	13.1 „
Total	2,142,000 „	112.4 „
Deduct irrigation under Stage II	1,842,000 „	
Additional irrigation	300,000 „	

11. Normal rainfall and river supply proposed to be diverted (South Canal)

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*	*South Canal*	
	........*inches*..........			....*T.M.C.*.....	
June				12.30	0.15
July				73.30	0.88
August				81.50	0.98
September				70.00	0.87
October	Same as under Stage II			59.70	0.72
November				59.20	0.74
December				13.80	0.17
January				6.70	0.08
February				23.70	0.32
March				16.30	0.20
April				18.00	0.22
May				9.90	0.12
Total				**444.40**	
Deduct diversion proposed under Godavari Canals Stage II (South Canal)				274.20	
Additional diversion				**170.20**	

12. to 14. Same as under Stage II

15. (a) Proposed pattern of irrigated cultivation

Perennial			*Abi*		*Tabi*		
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Grand Total (T. acres)*
Sugarcane	*Others*		*Paddy*		*Paddy*		
South Canal							
1.9	5.6	160.0	8.8	1,732.0	11.7	250.0	2,142.0

(b) **Are there any rules for regulating crop pattern?**

Paddy and Sugarcane areas will be localised

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Abi*	*Tabi*	*Perennial*	*Abi*	*Tabi*	*Overall*
67	75	50	10.8	4.7	3.4	5.4

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Same as under Stage II

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

Same as under Stage II

18. Quantum of river supplies available in relation to withdrawals

Adequacy or otherwise of river supplies for this project would be governed by the requirements of an integrated basin-wide plan

19. to 21. Same as under Stage II

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. to 27. Not available

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation and irrigated dry crops to Paddy

29. Special features of the scheme

About a million acres of Ayacut lies out the drainage basin of the Godavari

INCHAMPALLI PROJECT

3C.3-G.10-A.3

1. **Name of State** Andhra Pradesh (formerly in Hyderabad)

2. **Scope of the scheme or system**

   Multipurpose scheme; flow-cum-storage; irrigation, Ayacut 300,000 acres; power, 600,000 kW. installed

3. **Source of supply**

   Godavari near Nilampalli village

   Considerable uses upstream, both existing and proposed

4. **Description of the reservoir or tank**

Live storage	390.00 T.M.C.
Dead storage	160.00 „
Carry-over	Nil
Annual reservoir losses	66.70 T.M.C.
Filling period	Aug. to Nov.
Depletion period	Dec. to July
Catchment area	100,300 square miles
Area submerged	355,200 acres
Full reservoir level	R.L. 390
Minimum pond level	R.L. 353

5. **Description of the headworks**

Dam : masonry, 6,180 feet long, 175 feet high

Spillway : central, 56 gates, 51 feet×40 feet each, total capacity 2,500,000 cusecs

Outlets : river sluices, 14 numbers, 12 feet×8 feet each, total capacity 20,000 cusecs; right side head sluices, 7 vents, 6 feet×10 feet each, total capacity 4,370 cusecs;

left side head sluices, 5 vents, 6 feet×10 feet each, total capacity 3,130 cusecs

6. **Description of the canals**

   Right Bank Canal (contour); 172 miles long; two seasonal; unlined; authorised capacity **4,078 cusecs**

   Left Bank Canal (contour); 112 miles long; two-seasonal; unlined; authorised capacity **2,952 cusecs**

7 (a) **Nature of investigations carried out up-to-date**

   Detailed investigations are in progress, Project report not ready

(b) **Actual or probable date of beginning of construction** IV Plan

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area, culturable commanded area and Ayacut, district-wise

Item	*Names of districts*			*Total*
	Right Canal		*Left Canal*	
	Warangal	*Khammam*	*Khammam*	
	..............*thousand*	*acres*..........	....	
G.C.A.	108.0	252.0	279.0	639.0
C.C.A.	85.0	150.0	165.0	400.0
Ayacut	64.0	112.0	124.0	300.0

10. Area proposed to be irrigated annually and intensity of irrigation (both canals)

	Area proposed to be irrigated		*Intensity of irrigation on Ayacut*	
Abi	300,000	acres	100.0	percent
Tabi	150,000	„	50.0	„
Total	**450,000**	„	**150.0**	„

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*		*Capacity factor*	
	Normal	*Maximum*	*Minimum*	*Right Canal*	*Left Canal*	*Right Canal*	*Left Canal*
1	2	3	4	5	6	7	8
	............*inches*	....		...*T.M.C.*....			
June	4.5	7.0	2.4	6.00	4.30	0.57	0.56
July	6.4	8.7	4.3	9.00	6.40	0.82	0.81
August	6.3	7.4	5.3	8.20	5.70	0.75	0.72
September	6.7	8.2	4.3	8.00	5.70	0.76	0.75
October	7.0	13.5	2.7	8.00	5.70	0.73	0.72
November	3.6	6.3	1.2	7.80	5.50	0.74	0.72
December	0.4	2.6	0.3	0.50	0.30	0.05	0.04
January	0.2	0.3	0.1	3.20	2.20	0.29	0.28
February	0.5	2.7	0.3	4.90	3.50	0.50	0.49
March	0.4	0.7	0.2	3.40	2.40	0.31	0.30
April	0.8	0.8	0.8	5.50	3.80	0.50	0.50
May	1.9	3.7	1.1	Nil	Nil	—	—
Total	**38.7**			**64.50**	**45.50**		
Total of both canals					**110.0**	**T.M.C.**	

12. Not available

13. (a) Characteristics of soils in the commanded area Loamy and black cotton

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

	Kharif		*Rabi*		*Total cropped area (T .acres)*
	Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops.*	*Total area (T. acres)*	
	Bajra and Others		*Jowar*		
Right Canal	32.0	28.0	68.0	60.0	88.0
Left Canal	32.0	19.8	68.0	42.2	62.0

About 150,000 acres of the Ayacut consists of forests and scrub jungle or of waste lands

15. (a) Proposed pattern of irrigated cultivation.

Abi		*Tabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Paddy*		
66.7	300.0	33.3	150.0	450.0

(b) Are there any rules for regulating crop-pattern ? No

16. Duty and Delta at canal head (as anticipated)

Abi —June to November (183 days).

Tabi—December to April (120 days)

Duty (acres per mean cusec)		*Delta (feet)*		
Abi	*Tabi*	*Abi*	*Tabi*	*Overall*
59	52	6.2	4.6	5.6

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

223 tanks, Ayacut 12,500 acres; not merged in the Ayacut

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

26 wells, area not included in the Ayacut

18. Quantum of river supplies available in relation to withdrawals

River supply data at the site not available. The adequacy or otherwise of river supplies for this project would also be governed by the requirements of an integrated basin-wide plan

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Power 12 units of 50,000 kW.

Month	*Range of operation head (feet)*	*Supply passing through turbines (cusecs)*
June	122	18,000
July	117	17,500
August	123	29,000
September	142	30,000
October	150	29,000
November	150	22,000
December	149	19,350
January	147	17,500
February	143	19,300
March	138	17,500
April	133	18,000
May	128	17,500
Total		**669.4 T.M.C.**

20. Proposed disposal of tail-race waters

The tail-race waters will be let into the river

21. Quantum of river supplies available in relation to withdrawals

See item 18 above

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Flood control as a result of regulation of flood waters at the dam

23. Extent and type of area submerged by reservoir

Out of the total submergence of 355,200 acres, 153,600 acres lie in Maharashtra, 53,120 acres in Madhya Pradesh and the rest in Andhra Pradesh; other particulars not available

24. to 27. Not available

28. Main features and purpose of the scheme

Power generation, conversion of rain-fed cultivation to irrigated agriculture and reclamation of forest and waste lands

SINGAREDDY HYDRO-ELECTRIC SCHEME

4C.3-G.10-A.4

1. **Name of State** Andhra Pradesh (formerly in Hyderabad)

2. **Scope of the scheme or system**

Hydro-electric scheme; flow-cum-regulated tail race discharges from the proposed Inchampalli reservoir (about 60 miles upstream); power 210,000 kW. installed

3. **Source of supply**

Godavari at Singareddi-palle

Considerable uses upstream, both existing and proposed

4. **Description of the reservoir or tank**

Live storage	Nil
Area submerged	13,376 acres
Full reservoir level	R.L. 260
Minimum pond level	R.L. 230

5. **Description of the headworks**

Dam : masonry, 6,300 feet long, 35 feet high

Spillway : ogee, 88 gates, 50 feet × 30 feet each, total capacity 2,830,000 cusecs

Outlets : 12 penstocks, 18 feet diameter, capacity 4,700 cusecs each

6. **Description of the canal**

No power canal, Power House at the toe of the dam

7. (a) **Nature of investigations carried out up-to-date**

Detailed investigations yet to be undertaken

(b) **Actual or probable date of beginning of construction** **V Plan**

8. Not available

9. to 18. Not applicable

POWER ASPECTS

19. **River supply proposed to be diverted and operation head**

Constant level of 55 feet and a mean power draft of 27,546 cusecs—872.7 T.M.C. annually; 6 units of 35,000 kW. each

Note : The supply passing through turbines cannot be very different from those shown in item 19 of Inchampalli Project

20. **Proposed disposal of tail-race waters**

Tail race waters will be let into the river

21. Quantum of river supplies available in relation to withdrawals

River supply data not available. The adequacy or otherwise of river supplies for the project would also be governed by the requirements of an integrated basin-vide plan

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

13,376 acres, all lying in Andhra Pradesh, mostly in river bed

24.—25. Not available

26. Not applicable

27. Not available

28. Main features and purpose of the scheme Power generation

IPPUR RESERVOIR SCHEME

5C.3-G.10-A.5

1. **Name of State** Andhra Pradesh (formerly in Madras)

2. **Scope of the scheme or system**

Multipurpose scheme; flow-cum-storage; irrigation, Ayacut 766,000 acres, power 420,000 kW. installed

3. **Source of supply**

Godavari at Ippur and Polavaram,

Considerable uses upstream, both existing and proposed

4. **Description of the dam and reservoir or tank**

Storage at Ippur

Live storage	205.00 T.M.C. plus 335.00 T.M.C. for flood storage
Dead storage	130.00 ,,
Carry-over	Nil
Annual reservoir losses	55.80 T.M.C.
Filling period	June to Oct.
Depletion period	Nov. to May
Catchment area	116,584 square miles
Area submerged	369,920 acres
Full reservoir level	R.L. 191 (maximum reservoir level R.L. 208)
Minimum pond level	R.L. 168

Dam : partly masonry and partly concrete, spillway portion 2,700 feet long, non-over flow section 400 feet on each side, 180 feet high

Spillway : 2,700 feet long, 18 vents, each 135 feet × 40 feet with drum gates of the same, 108 river sluices, each 10 feet × 20 feet, total capacity 3,141,548 cusecs

Penstocks : particulars not available

4. **Description of the headworks**

Barrage : 36 miles downstream of Ippur Dam, 7,780 feet long, spillway portion 5,368 feet long with 68 spans, each 20 feet × 10 feet, total capacity 3,141,508 cusecs

Head regulators : particulars not available

Penstocks : 6 numbers, 24 feet diameter, capacity **4,300 cusecs** each

6. **Description of the canals**

Right Bank Canal (contour); 124 miles long; perennial; unlined; authorised capacity **6,000 cusecs**

Left Bank Canal (contour); 130 miles; long; perennial; unlined; authorised capacity **9,139 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Project was investigated in 1948 as Ramapadasagar Project. A fresh project report will be prepared

(b) **Actual or probable date of beginning of construction** IV Plan

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area, culturable commanded area and Ayacut, district-wise**

Item	*Names of districts*				*Total*
	Left Bank Canal		*Right Bank Canal*		
	Visakhapatam	*East Godavari*	*West Godavari*	*Krishna*	
	................*thousands acres*..........................				
G.C.A.	534.0	227.0	306.0	62.0	1,129.0
C.C.A.	362.0	154.0	257.0	52.0	825.0
Ayacut	327.0	139.0	249.0	51.0	766.0

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Right Bank Canal		*Left Bank Canal*		*Godavari Delta*	
	Area proposed to be irrigated (*T. acres*)	*Intensity of irrigation on Ayacut* (*percentage*)	*Area proposed to be irrigated* (*T. acres*)	*Intensity of irrigation on Ayacut* (*percentage*)	*Area proposed to be irrigated* (*T. acres*)	*Intensity of irrigation on Ayacut* (*percentage*)
Abi	300.0	100.0	466.0	100.0	1,100.0	100.0
Tabi	200.0	66.7	310.0	66.5	800.0	72.7
Total	**500.0**	**166.7**	**776.0**	**166.5**	**1,900.0**	**172.7**
Deduct irrigation proposed on Delta canals under **7C.3-G.10-A.7**					1,500.0	
Additional irrigation	500.0		776.0		400.0	
Total additional irrigation			1,676,000 acres			

11. Normal rainfall and river supply proposed to be diverted

Month	Rainfall			River supply proposed to be diverted			Capacity factor	
	Nor-mal	*Maxi-mum*	*Mini-mum*	*Right Bank Canal*	*Left Ban Canal*	*Delta Canals*	*Right Bank Canal*	*Left Bank Canal*
1	2	3	4	5	6	7	8	9
	......*inches*....			........*T.M.C.*.........				
June	4.5	7.0	2.4	11.27	17.42	29.20	0.72	0.74
July	6.4	8.7	4.3	15.47	24.02	38.85	0.96	0.98
August	6.3	7.4	5.3	12.32	20.06	37.63	0.77	0.82
September	6.7	8.2	4.3	12.00	18.60	32.50	0.77	0.79
October	7.0	13.5	2.7	12.40	19.22	29.62	0.77	0.79
November	3.6	6.3	1.2	12.00	18.60	28.03	0.77	0.79
December	0.4	2.6	0.3	1.69	3.29	42.00	0.11	0.13
January	0.2	0.3	0.1	7.56	11.61	44.00	0.47	0.47
February	0.5	2.7	0.3	11.20	16.68	39.00	0.77	0.75
March	0.4	0.7	0.2	12.40	18.47	28.20	0.77	0.75
April	0.8	0.8	0.8	12.00	17.86	26.30	0.77	0.75
May	1.9	3.7	1.1	Nil	0.05	Nil	—	—
Total	**38.7**			**120.31**	**185.88**	**375.30**		
Deduct diversion proposed under providing 6 feet Drum gates to Godavari Anicut						310.35		
Total				**120.31**	**185.88**	**63.98**		
Total Additional diversion				**371.17 T.M.C.**				

12. Not available

13. (a) Characteristics of soils in the commanded area Alluvial and black cotton

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

	Kharif				*Rabi*			
	Percentage of principal crops			*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Total cropped area (T. acres)*
	Jowar	*Bajra*	*Others*		*Pulses*	*Oil seeds*		
Left Bank Canal	18.8	20.2	7.6	152.0	24.2	29.2	174.0	326.0
Right Bank Canal	24.3	3.3	3.8	66.0	33.3	35.3	144.0	210.0

240.000 acres of the Ayacut are forests, scrub-jungle and waste lands

15. **(a) Proposed pattern of irrigated cultivation**

	Abi		*Tabi*		
	Percentage of principal crops Paddy	*Total area (T. acres)*	*Percentage of principal crops Paddy*	*Total area (T. acres)*	*Grand total (T. acres)*
Left Bank Canal	60.0	466.0	40.0	310.0	776.0
Right Bank Canal	60.0	300.0	40.0	200.0	500.0
Delta Canals	57.9	1,100.0	42.1	800.0	1,900.0

(b) Are there any rules for regulating crop pattern? No

16. **Duty and Delta at canal head (as anticipated)**

	Duty (acres per mean cusec)		*Delta (feet)*		
	Abi	*Tabi*	*Abi*	*Tabi*	*Overall*
New canals	75	50	5.1	4.2	5.1
Delta canals	80	40	4.5	4.5	

17. **(a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

367 tanks, Ayacut 101,349 acres, not included in the Ayacut

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

5,192 wells, in West Godavari District, Ayacut 7,637 acres, not included in the Ayacut; particulars of wells in other districts not available

18. **Quantum of river supplies available in relation to withdrawals .**

River supply data at the site not available. Adequacy or otherwise of river supplies for the project would be governed also by the requirements of an integrated basin-vide plan

POWER ASPECTS

19. River supply proposed to be diverted and operation head

(i) At Ippur Dam Power House

6 units of 20,000 kW. each at the dam

Month	*Range of operation head (feet)*	*Supply passing through turbines (cusecs)*
June	32	24.400
July	38	29,400
August	25	37,300
September	29	32,400
October	40	23,600
November	45	23,800
December	44	22,400
January	43	22,600
February	41	26,400
March	39	26,100
April	36	22,200
May	34	21,700
Total		**820.7** T.M.C.

(ii) At Barrage Power House

6 units of 50,000 kW. each at the barrage, constant head of 100 feet and supply passing through turbines will be **514.3** T.M.C. annually—monthly distribution not available

20. Proposed disposal of tail-race waters

The tail race waters from the power house at the Barrage will be let into the river

21. Quantum of river supplies available in relation to withdrawals

Same as under item 18 above

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Flood control and Navigation. The proposed canals will also be navigable for craft upto 18 feet draft, interconnecting the existing navigation canals of Godavari and Krishna Delta to link with Visakhapatnam, Kakinada and Madras ports

23. Extent and type of area submerged by reservoir

Out of the total submergence of 369,920 acres, 11,040 acres lie in Madhya Pradesh and 9,805 acres in Orissa, the rest is in Andhra Pradesh; other particulars not available

24. to 27. Not available

28. Main features and purpose of the scheme

Flood control, power generation, conversion of rain-fed cultivation to irrigated agriculture, reclamation of forests and waste lands, increase in intensity of cultivation

29. Special features of the scheme

83 percent of the Ayacut lies outside the Godavari drainage basin.

GUTALA PUMPING SCHEME

6C.3-G.10-A.6

1. **Name of State** Andhra Pradesh (formerly in Madras)

2. **Scope of the scheme or system**
Irrigation scheme; based on flow; Ayacut 13,500 acres

3. **Source of supply** .
Godavari river, 21 miles above Dowlaishwaram Anicut

4. Not applicable

5. **Description of the headworks**
The headworks consist of a conduit, a suction well, and a pump house. Three vertical spindle deep well pumps of 550 horse power, each capable of pumping 87 cusecs against a head of 40 feet

6. **Description of the canal**
Akhanda Godavari Canal (contour); right bank; 15 miles long; perennial; unlined; authorised capacity **170 cusecs**

7. (a) **Nature of investigations carried out up-to-date** Project report under preparation
(b) **Actual or probable date of beginning of construction** IV Plan

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area, culturable commanded area and Ayacut, District-wise**

District West Godavari

G.C.A.	20,000 acres
C.C.A.	15,000 ,,
Ayacut	13,500 ,,

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated	*Intensity of irrigation on Ayacut*
Perennial	8,400 acres	62.2 percent
Abi	5,100 ,,	37.8 ,,
Total	**13,500** ,,	**100.0** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	......*inches*........			......*T.M.C.*......	
June	5.5	10.7	1.2	0.41	0.93
July	7.6	14.6	4.6	0.42	0.92
August	7.0	13.0	1.9	0.42	0.92
September	7.4	12.0	3.1	0.41	0.93
October	6.5	10.7	4.0	0.42	0.92
November	2.8	5.1	Nil	0.41	0.93
December	0.2	4.3	,,	0.24	0.53
January	0.2	0.4	,,	0.24	0.53
February	0.5	3.2	,,	0.22	0.54
March	0.5	0.9	,,	0.24	0.53
April	0.9	2.5	,,	0.22	0.50
May	2.2	8.5	,,	Nil	—
Total	**41.3**			**3.65**	

12. to 13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif		*Total cropped area (T. acres)*
Percentage of principal crops		
Tobacco	*Jowar*	
40.0	60.0	13.5

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Abi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane		*Paddy*		
62.2	8.4	37.8	5.1	13.5

(b) **Are there any rules for regulating crop pattern ?**

Paddy and sugarcane areas will be localised

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Perennial	*Abi*	*Perennial*	*Abi*	*Overall*
90	80	7.3	4.5	6.2

17. (a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

Nil

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

Nil

18. **Quantum of river supplies available in relation to withdrawals**

Adequate supplies are available

19. to 21. Not applicable

GENERAL

22. **Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns**

Nil

23. Not applicable

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

PROVIDING 6 FEET DRUM GATES TO GODAVARI ANICUT

7C.3-G.10-A.7

1. **Name of State** Andhra Pradesh (formerly in Madras)

2. **Scope of the scheme or system**

   Irrigation scheme; flow; additional Ayacut 115,900 acres

3. **Source of supply**

   Godavari at Dowlaishwaram

4. Not applicable

5. **Description of the reservoir or tank**

   Same as under **2A-G.10-A.2** except replacement of the existing 3 feet falling shutters by 6 feet drum gates, and providing consequential protection

6. **Description of the canals**

   Same as under **2A-G.10-A.2** with the addition of following new canals

   Left Bank High Level Canal (contour); 7 miles long; one seasonal; unlined; authorised capacity 22 cusecs

   Right Bank High Level Canal (contour); 11 miles long; one seasonal; unlined; authorised capacity 303 cusecs

7. (a) **Nature of investigations carried out up-to-date** Project report ready

   (b) **Actual or probable date of beginning of construction** III Plan

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area, culturable commanded area and Ayacut, district-wise**

Item	*Names of districts*				*Total*
	Left Bank High Level Canal	*Right Bank High Level Canal*	*Godavari Delta System*		
	East Godavari	*West Godavari*	*East Godavari*	*West Godavari*	
	thousand acres				
G.C.A.	2.4	30.0	(Included in **2A-G.10-A.2**)		
C.C.A.	2.0	25.0			
Ayacut	1.7	24.2	40.0*	50.0*	115.9

Additional to the Ayacut under Godavari Delta System* **2A-G.10-A.2.

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated					Intensity of irrigation on Ayacut				
	High Level Canal		Existing Delta Canals			High Level Canal		Existing Delta Canals		
	Left Bank Canal	Right Bank Canal	Western Main Canal	Central Main Canal	Eastern Main Canal	Left Bank Canal	Right Bank Canal	Western Main Canal	Central Main Canal	Eastern Main Canal
	...............thousand acres..........					........percentage........................				
Abi	1.7	24.2	540.0	210.0	350.0	100.0	100.0	100.0	100.0	100.0
Tabi	—	—	175.0	94.0	131.0	—	—	32.4	44.8	37.4
Total	**1.7**	**24.2**	**715.0**	**304.0**	**481.0**	**100.0**	**100.0**	**132.4**	**144.8**	**137.4**

Total irrigated area	**1,525,900**	**acres**
Deduct existing irrigation under **2A-G.10-A.2**	1,276,300	,,
Additional irrigation	249,600	,,

11. Normal rainfall and river supply proposed to be diverted

Month	Rainfall			River supply proposed to be diverted						Capacity factor				
				High Level Canal		Godavari Western Delta	Godavari Central Delta	Godavari Eastern Delta	Total diversion	High Level Canal		Godavari Western Delta	Godavari Central Delta	Godavari Eastern Delta
	Normal	Maximum	Minimum	Left Bank	Right Bank					Left Bank	Right Bank			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	......inches.....			............T.M.C................										
June	5.3	7.9	Nil	0.04	0.56	14.00	5.30	9.30	29·20	0.74	0.72	0.74	0.58	0.73
July	7.5	14.0	3.7	0.06	0.79	18.50	8.50	11.00	38.85	0.98	0.98	0.95	0.90	0.84
August	7.0	14.1	3.2	0.06	0.77	17.50	8.30	11.00	37.63	0.95	0.95	0.90	0.88	0.84
September	7.4	11.1	3.2	0.06	0.77	15.00	6.20	10.50	32.53	0.97	0.98	0.79	0.67	0.83
October	6.5	12.6	3.7	0.06	0.77	15.00	4.30	9.50	29.63	0.95	0.95	0.76	0.45	0.73
November	3.0	6.9	Nil	0.06	0.77	14.00	4.20	9.00	28.03	0.97	0.98	0.74	0.46	0.71
December	0.2	3.9	,,	0.29	0.39	19.10	9.20	13.30	42.28	0.50	0.48	0.97	0.98	1.01
January	0.2	0.6	,,	Nil	Nil	11.50	6.00	8.10	25.60	—	—	0.54	0.64	0.62
February	0.5	1.3	,,	,,	,,	9.50	5.00	5.90	20.40	—	—	0.48	0.58	0.50
March	0.5	2.2	,,	,,	,,	7.00	3.00	5.40	15.40	—	—	0.33	0.32	0.41
April	0.8	2.3	,,	,,	,,	5.00	1.20	4.60	10.80	—	—	0.24	0.23	0.37
May	2.0	5.9	,,	,,	,,	Nil	Nil	Nil	Nil	—	—	—	—	—
Total	**40.9**			**0.63**	**4.82**	**146.10**	**61.20**	**97.60**	**310.35**					

Deduct existing diversion in **2.A-G.10-A.2**	**253.00**
Additional diversion	**57.35**

12. Not available

13. (a) Characteristics of soils in the commanded area Alluvial soils

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

	Kharif		
	Percentage of principal crops		*Total cropped area (T. acres)*
	Tobacco	*Jowar*	
High Level Canals	40	60	24
Delta Canals	36	64	50

41,900 acres not cultivated

15. (a) Proposed pattern of irrigated cultivation

	Abi		*Tabi*		*Grand Total (T. acres)*
	Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
	Paddy		*Paddy*		
High Level Canals	100.0	25.9	—	—	25.9
New Delta irrigation	73.3	1,100.0	26.7	400.0	1500.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	I Crop	*II Crop*	*I Crop*	*II Crop*	*Overall*
High Level Canals	80	—	4.5	—	—
Delta Canals	80	40	4.5	4.5	4.5

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

Under present conditions and based on available river discharge adequate supplies are available in the river from July to November; from December to April, the project requirements are available in only 14—18 years out of 40 and in June is 25 years out of 40 years

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Not available

24. Total cost of the scheme Rs. 2,72 lakhs

25. Financial return of the scheme

The installation of drum gates is proposed to be financed entirely from the contributions of the Ryots. A bill for this purpose will be introduced shortly. The estimated cost of the High Level Canals 1,54 lakhs.

26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

29. Special features of the scheme

About 65 percent of the Ayacut lies outside the drainage basin of the Godavari

DEVNOOR HYDRO-ELECTRIC SCHEME

8C.3-G.4-A.8

1. **Name of State** Andhra Pradesh (formerly in Hyderabad)

2. **Scope of the scheme or system**

Hydro electric scheme; flow-cum-storage; 30,000 kW. installed, at canal power house and 3,000 kW. at dam power house

3. **Source of supply**

Manjra at Devnoor/**Godavari**

Utilisation upstream :
existing : nil
proposed : considerable

4. **Description of the reservoir or tanks**

Live storage	33.70 T.M.C.
Dead storage	9.80 ,,
Carry-over	9.90 ,,
Annual reservoir losses	11.90 ,,
Filling period	July to Nov.
Depletion period	Dec. to June
Catchment area	5,809 square miles
Area submerged	54,400 acres
Full reservoir level	R.L. 1,754.5
Dead storage level	R.L. 1,731.5

5. **Description of the headworks**

Dam : masonry, 920 feet long, 74 feet high, with earthen dam, 5,180 feet long on the left flank and 6,700 feet on the right flank, 70 feet high
Spillway : ogee, 12 gates, 60 feet × 25 feet each, total capacity 391,200 cusecs
Outlets : (i) seven, river sluices, 6 feet × 9 feet each, total capacity 68,800 cusecs
(ii) head regulator 5 vents, 6 feet × 10.5 feet each, total capacity 1,890 cusecs

6. **Description of the canal**

Contour canal 13 miles long; head race tunnel 3,500 feet long, and tail-race tunnel 23,800 feet long; authorised capacity **1,500 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Investigations completed and project report was prepared in 1957

(b) **Actual or probable date of beginning of construction** IV Plan

8. **Probable date of beginning of operation** V Plan

9. **to 18.** Not applicable

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Month	*Range of operation head (feet)*		*River supply proposed to be diverted (T.M.C.)*	
	Canal Power House	*Dam Power House*	*Canal Power House*	*Dam Power House*
June	270	58	3.11	0.55
July	,,	60	3.21	0.80
August	,,	63	3.21	1.14
September	,,	66	3.11	0.77
October	,,	69	3.21	0.98
November	,,	71	3.11	0.53
December	,,	72	3.21	0.26
January	,,	71	3.21	0.33
February	,,	69	2.90	0.50
March	,,	67	3.22	0.53
April	,,	64	3.12	0.51
May	,,	61	3.22	0.34
Total			**37.84**	**7.24**
	Total		**45.08** T.M.C.	

Continuous mean power draft 1,200 cusecs (37.84 T.M.C.) operation head 270 feet

(Besides, power to the extent of 3,000 kW. can be generated at the toe of the dam from the releases required for irrigation under Ghanpur and Manjra water supply scheme: Head 58 to 72 feet)

20. Proposed disposal of tail race waters

The tail race waters from the canal power house will be let into Nizamsagar Reservoir and those from the Dam Power House in the river

21. Quantum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

20,561 acres of cultivated dry land in Mysore
32,831 acres of cultivated dry land in Andhra Pradesh
1,008 acres occupied by river, waste land etc.
Total 54,400 acres

24. **Total cost of the scheme**

Rs. 9,60 lakhs (canal power house); Rs. 15 lakh (dam power house); total Rs. 9,75 lakhs

25. **Financial return of the scheme**

4.18 percent in the 6th year of operation

26. Not applicable

27. **Cost per kW. of power produced** Rs. 2,955

28. **Main features and purpose of the scheme** Power generation

MANJRA IRRIGATION SCHEME

9C.3-G.4-A.9

1. **Name of State** Andhra Pradesh (formerly in Hyderabad)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; Ayacut 22,500 acres

3. **Source of supply**

Manjra at Singur/**Godavari**
Utilisation upstream :
existing : minor tanks only
proposed : several schemes

4. **Description of the reservoir or tank**

Live storage	1.47 T.M.C.
Dead storage	0.66 ,,
Carry-over	Nil
Annual reservoir losses	0.10 T.M.C.
Filling period	July to October
Depletion period	July to November
Catchment area	6,215 square miles
Area submerged	5,441 acres
Full reservoir level	R.L. 1,684
Minimum pond level	R.L. 1,675

5. **Description of the headworks**

Dam : earthen, 7,838 feet long, 42 feet high

Spillway : ogee fitted with 29 gates, each 40 feet × 21 feet, total capacity 470,600 cusecs

Outlets : 3 river sluices, each 8 feet × 12 feet, total capacity 4,334 cusecs

Head regulator : 4 vents, each 4 feet × 5.75 feet, total capacity 552 cusecs

6. **Description of the canals**

Right Bank Canal (contour); 2.5 miles long ; one seasonal; unlined; authorised capacity **17 cusecs**

Left Bank Canal (contour); 24.25 miles long; one seasonal; unlined; authorised capacity **500 cusecs**

7. **(a) Nature of investigations carried out up-to-date** Project report under preparation

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area, culturable commanded area and Ayacut, district-wise**

District Medak

	Left Bank Canal	*Right Bank Canal*	*Total*
		...thousand acres...	
G.C.A.	35.3	1.2	36.5
C.C.A.	34.1	1.2	35.3
Ayacut	21.8	0.7	22.5

10. **Area proposed to be irrigated annually and intensity of irrigation (both canals)**

	Area proposed to be irrigated	*Intensity of irrigation on Ayacut*
Abi	22,500 acres	100.0 percent

11. **Normal rainfall and river supply proposed to be diverted (both canals)**

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
		...inches...		*....T.M.C....*	
June	4.7	8.3	0.4	0.51	0.38
July	7.2	11.9	4.0	0.83	0.60
August	7.4	13.2	4.0	1.07	0.77
September	8.3	13.5	4.4	1.14	0.85
October	2.5	7.3	0.3	0.78	0.56
November	1.0	3.1	Nil	0.17	0.13
December	0.2	2.3	,,	Nil	—
January	0.3	0.3	,,	,,	—
February	0.4	1.6	,,	,,	—
March	0.5	1.3	,,	,,	—
April	0.9	1.9	,,	,,	—
May	0.8	3.3	,,	,,	—
Total	**34.2**			**4.50**	

12. Not available

13. **(a) Characteristics of soils in the commanded area** Loamy soil

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif				*Rabi*				*Total cropped area (T. acres)*
Percentage of principal crops			*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T.acres)*	
Jowar	*Oil seeds*	*Others*		*Jowar*	*Melons*	*Others*		
37.2	7.7	5.1	11.7	33.6	9.6	4.8	10.8	22.5

15. (a) Proposed pattern of irrigated cultivation

Abi	*Total area (T. acres)*
Percentage of principal crops	
Paddy	
100.0	22.5

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)	*Delta (feet)*
Abi	*Abi*
78	4.6

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

96 tanks, irrigating 4,000 acres, excluded from the Ayacut

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

103 wells, irrigating 127 acres, excluded from the Ayacut

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power ; water supply (month-wise), if any, required for these aspects ; financial returns

Nil

23. **Extent and type of area submerged by reservoir**

Submergence in Andhra Pradesh—culturable land 4,040 acres, waste and forest lands 1,401 acres

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated paddy

KAPPALVAGU PROJECT

10C.3-G.5-A.10

1. **Name of State** Andhra Pradesh (formerly in Hyderabad)

2. **Scope of the scheme or system**
   Irrigation scheme; flow-cum-storage; Ayacut 8,000 acres

3. **Source of supply**
   Kappalvagu/Peddavagu/Pranhita/**Godavari**
   Utilisation upstream : nil

4. **Description of the reservoir or tank**

Live storage	0.95 T.M.C.
Dead storage	0.11 ,,
Carry-over	0.04 ,,
Annual reservoir losses	0.35 ,,
Filling period	June to Oct.
Depletion period	Nov. to April
Catchment area	189 square miles
Area submerged	2,200 acres
Full reservoir level	R.L. 1,147
Minimum pond level	R.L. 1,129

5. **Description of the headworks**
   Dam : earthen, 9,800 feet long, 67 feet high
   Spillway: free overfall weir, 1,600 feet long, capacity 51,200 cusecs
   Outlets : irrigation sluices in right flank, 3 vents, each 4 feet × 3½ feet; total capacity 216 cusecs

6. **Description of the canal**
   Right Flank Channel (contour); 10 miles long; two seasonal; unlined; authorised capacity **200 cusecs**

7. (a) **Nature of investigations carried out up-to-date**
   Surveys completed; project report under preparation
   (b) **Actual or probable date of beginning of construction** IV Plan

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area, culturable commanded area and Ayacut, district-wise**

District Nizamabad	
G.C.A.	16,000 acres
C.C.A.	12,800 ,,
Ayacut	8,000 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation on Ayacut*
Abi	8,000 acres	100.0 percent
Tabi	1,600 ,,	20.0 ,,
Total	**9,600** ,,	**120.0** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	........*inches*........			.......*T.M.C.*.......	
June	6.0	7.4	1.7	0.04	0.08
July	11.0	25.9	6.1	0.05	0.09
August	8.0	14.7	4.2	0.46	0.86
September	8.0	13.3	2.5	0.34	0.66
October	3.0	7.5	Nil	0.49	0.91
November	1.0	7.7	,,	0.27	0.52
December	0.2	0.3	,,	0.03	0.06
January	0.1	0.4	,,	0.09	0.17
February	1.0	3.0	,,	0.08	0.17
March	0.5	1.2	,,	0.09	0.17
April	0.8	1.4	,,	0.06	0.12
May	0.8	1.8	,,	Nil	—
Total	**40.4**			**2.00**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Brown red sandy loams and light clay loams

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif			*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Jowar	*Others*		*Pulses*	*Oilseeds*		
21.9	51.3	4.1	16.7	10.1	1.5	5.6

15. (a) Proposed pattern of irrigated cultivation

Abi		*Tabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Paddy*		
83.3	8.0	16.7	1.6	9.6

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Abi	*Tabi*	*Abi*	*Tabi*	*Overall*
77	55.4	4.7	5.0	4.8

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

6 tanks, irrigating area 382 acres, not included in the Ayacut

(b) Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. **Aspects other than irrigating and power; water supply (month-wise), if any, required for these aspects; financial returns**

Nil

23. to 26. Not available

27. Not applicable

28. **Main features and purpose of the scheme**

Conversion of rain-fed cultivation to irrigated paddy

KUNTALA HYDRO-ELECTRIC SCHEME

11C.3-G.5-A.11

1. Name of State Andhra Pradesh (formerly in Hyderabad)

2. Scope of the scheme or system

Hydro-electric scheme; flow-cum-storage; power, 9,000 kW. installed

3. Source of supply

Kaddam at Kuntala Falls/**Godavari**

Utilisation upstream : nil

4. Description of the reservoir or tank

Live storage	3.30 T.M.C.
Dead storage	1.61 ,,
Carry-over	Nil
Annual reservoir losses	0.70 T.M.C.
Filling period	July to October
Depletion period	November to June
Area submerged	4,032 acres
Catchment area	254 square miles
Full reservoir level	R.L. 1,245
Dead storage level	R.L. 1,223

5. Description of the headworks

Dam : masonry, 1,800 feet long, 77 feet high

Spillway : 340 feet long, 7 gates, 40 feet × 20 feet each, total capacity 87,000 cusecs

Outlet : one power sluice, 5 feet × 6 feet

6. Description of the canal

Power Canal (contour) ; left bank; 3 miles long ; perennial; lined ; authorised capacity **280 cusecs**

7. (a) Nature of the investigations carried out up-to-date

Detailed investigations are in progress

(b) Actual or probable date of beginning of construction IV Plan

8. Not available

9. to 18. Not applicable

POWER ASPECTS

19. River supply proposed to be diverted and operation head

A constant operation head of 450 feet and a mean power draft of 125 cusecs or **3.94** T.M.C. annually

20. Proposed disposal of tail-race waters

Tail-race waters will be let into the river

21. Quantum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Mostly forest and jungle area within Andhra Pradesh

24. to. 25. Not available

26. Not applicable

27. Not available

28. Main features and purpose of the scheme Power generation

LOWER MANER PROJECT

12C.3-G.6-A.12

1. **Name of State** Andhra Pradesh (formerly in Hyderabad)

2. **Scope of the scheme or system**

Multipurpose scheme; flow-cum-storage; irrigation, Ayacut 68,000 acres; power, 2 units of 1,000 kW. each, operation head 40 feet, in the canal

3. **Source of supply**

Maner at Potgal/Godavari

considerable utilisation upstream both existing and proposed

4. **Description of the reservoir or tank**

Live storage	7.13 T.M.C.
Dead storage	3.40 „
Annual reservoir losses	2.27 „
Filling period	June to October
Depletion period	November to May
Catchment area	2,567 square miles
Area submerged	12,300 acres
Full reservoir level	R. L. 897
Minimum pond level	R. L. 879

5. **Description of the headworks**

Dam : masonry, 320 feet long, 67 feet high with earthen flanks, right and left, 8300 feet and 7,700 feet long respectively

Spillway : 1,540 feet long, 31 gates, each 40 feet × 20 feet, total capacity 428,000 cusecs

Outlets : head sluices in right flank, 3 vents, each 4 feet × 5.75 feet, total capacity 414 cusecs
head sluices in left flank, 4 vents, each 4 feet × 5.75 feet, total capacity 512 cusecs

6. **Description of the canals**

Right Bank Canal (contour); 16.28 miles long; one seasonal; unlined; authorised capacity **336 cusecs**

Left Bank Canal (contour); 21.21 miles long; perennial; unlined; authorised capacity **502 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Surveys completed, project report under preparation

(b) **Actual or probable date of beginning of construction** IV Plan

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area, culturable commanded area and Ayacut, district-wise

District Karimnagar

	Right Bank Canal	*Left Bank Canal*	*Total*
		......*thousand acres*......	
G.C.A.	59.7	98.2	157.9
C.C.A.	45.2	76.0	121.2
Ayacut	27.1	40.9	68.0

10. Area proposed to be irrigated annually and intensity of irrigation

	Left Bank Canal		*Right Bank Canal*	
	Area proposed to be irrigated	*Intensity of irrigation on Ayacut*	*Area proposed to be irrigated*	*Intensity of irrigation on Ayacut*
	thousand acres	*percentage*	*thousand acres*	*percentage*
Perennial	3.6	8.2	2.4	8.8
Abi	14.9	34.0	10.1	37.3
Rabi	23.4	57.8	14.6	53.9
Total	**41.9**	**100.0**	**27.1**	**100.0**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*		*Capacity factor*	
	Normal	*Maximum*	*Minimum*	*Right Bank Canal*	*Left Bank Canal*	*Right Bank Canal*	*Left Bank Canal*
1	2	3	4	5	6	7	8
	........*inches*........			....*T.M.C.*....			
June	4.7	6.0	1.4	0.24	0.35	0.28	0.27
July	9.1	14.1	2.8	0.49	0.72	0.54	0.54
August	6.4	11.5	2.1	0.64	1.07	0.71	0.80
September	7.1	12.8	2.2	0.75	1.12	0.86	0.86
October	3.0	8.6	0.3	0.90	1.34	1.00	1.00
November	1.4	1.6	Nil	0.50	0.76	0.57	0.58
December	0.1	0.4	,,	0.51	0.79	0.57	0.59
January	0.2	1.6	,,	0.36	0.77	0.40	0.57
February	1.4	0.1	,,	Nil	0.26	—	0.21
March	0.6	3.0	,,	,,	0.32	—	0.24
April	1.1	4.5	,,	,,	0.28	—	0.22
May	1.7	4.5	,,	,,	0.04	—	0.03
Total	**36.8**			**4.39**	**7·82**		

Total for both canals **12.21** T.M.C.

12. Not available

13. (a) Characteristics of soils in the commanded area

Loamy and light black cotton

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics?

No

14. Existing pattern of cultivation in the area proposed to be irrigated (both canals)

Kharif			*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy	*Others*		*Maize*	*Oil Seeds*		
11.0	37.2	24.6	29.7	22.1	26.4	51.0

17,000 acres of Government waste lands included in the Ayacut

15. (a) Proposed pattern of irrigated cultivation (both canals)

Perennial		*Abi*		*Rabi*			
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Grand Total (T. acres)*
Garden		*Paddy*		*Paddy*	*Others*		
8.5	6.0	35.2	25.0	4.3	52.0	40.0	71.0

(b) Are there any rules for regulating crop pattern ?

Wet and dry areas will be localised

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)				*Delta (feet)*				
Perennial	*Abi*	*Rabi*		*Perennial*	*Abi*	*Rabi*		*Overall*
Garden		*Paddy*	*Others*	*Garden*		*Paddy*	*Others*	
80	64	50	105	5.7	5.3	4.7	2.2	3.9

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

869 tanks, irrigating 14,600 acres, not included in the Ayacut

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

3,814 wells, irrigating 2,066 acres, not included in the Ayacut

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Power is developed on the Left Bank Canal at mile 13

Month	*Range of operation head (feet)*	*Supply passing through turbines (cusecs)*
June	34	138
July	34	271
August	39	379
September	46	429
October	48	502
November	48	293
December	44	293
January	41	286
February	40	106
March	39	120
April	37	107
May	36	42
Total		**7.82 T.M.C.**

20. Proposed disposal of tail-race waters

The tail-race waters are used in the canal for irrigation

21. Quantum of river supplies available in relation to withdrawals

Same as for item 18 above

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspect financial returns

Nil

23. Extent and type of area submerged by reservoir

Total submerged area 12,300 acres, wet lands 1,573 acres, dry land 7,825, acres barren lands 2902 acres; entire submergence would lie in Andhra Pradesh

24. to 27. Not available

28. Main features and purpose of the scheme

Converasion of rain-fed cultivation to irrigated agriculture, power generation, reclamation of forest and waste lands.

PRANHITA PROJECT

13C.3-G.9-A.13

1. **Name of State** Andhra Pradesh (formerly in Hyderabad)

2. **Scope of the scheme or system**

Multipurpose scheme ; irrigation, Ayacut 150,000 acres ; power, 300,000 kW. installed

3. **Source of supply**

Pranhita near Watra Bekruk/Godavari

Considerable uses upstream both existing and proposed

4. **Description of the reservoir or tank**

Live storage	110.0 T.M.C.
Dead storage	143.0 ,,
Carry-over	Nil
Annual reservoir losses	27.0 T.M.C.
Filling period	July to November
Depletion period	December to June
Catchment area	36,900 square miles
Area submerged	179,200 acres (submergence extends into Maharashtra)
Full reservoir level	R.L. 475
Minimum pond level	R.L. 455

5. **Description of the headworks**

Dam :	masonry, 4,300 feet long, 140 feet high
Spillway :	masonry, fitted with 13 gates, 60 feet × 50 feet each, total capacity 1,000,000 cusecs
Outlets :	8 river sluices, 5 feet × 8 feet each, total capacity 4,800 cusecs; head regulator, right side, 6 vents, 6 feet × 10 feet each, total capacity 3,742 cusecs; 8 penstocks, 22 feet diameter, capacity 6,600 cusecs each

6. **Description of the canal**

Pranhita canal (contour) ; right bank ; 87 miles long ; two seasonal ; unlined ; authorised capacity 3,450 cusecs

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken ; present proposal based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area, culturable commanded area and Ayacut, district-wise

District Adilabad

G.C.A.	180,000 acres
C.C.A.	171,000 ,,
Ayacut	150,000 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area prposed to be irrigated	*Intensity of irrigation on Ayacut*
Abi	150,000 acres	100.0 percent
Tabi	100,000 ,,	66.7 ,,
Total	**250,000 ,,**	**166.7 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	inches	*inches*	*inches*	*T.M.C.*	
June	10.0	27.7	0.2	4.96	0.55
July	11.0	23.4	2.4	7.58	0.82
August	12.0	17.8	1.9	6.17	0.67
September	7.0	17.3	0.7	6.02	0.67
October	1.0	6.2	0.1	6.17	0.67
November	0.6	4.6	0.2	4.02	0.45
December	0.4	1.7	0.3	2.00	0.22
January	0.5	2.3	Nil	5.60	0.61
February	0.5	5.4	0.1	4.15	0.50
March	0.4	3.0	Nil	5.80	0.63
April	0.9	6.8	0.1	5.19	0.58
May	0.9	5.1	0.1	Nil	—
Total	**45.2**			**57.66**	

12. Not available

13. (a) Characteristics of soils in the commanded area Sandy loam

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif		*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Jowar		*Maize*	*Others*		
73.3	55.0	6.1	20.6	20.0	75.0

75,000 acres in the Ayacut consist of forest and scrub jungle

15. (a) Proposed pattern of irrigated cultivation

Abi		*Tabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Paddy*		
60.0	150.0	40.0	100.0	250.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Abi	*Tabi*	*Abi*	*Tabi*	*Overall*
65	50	5.7	4.8	5.3

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

85 tanks, irrigated 2,726 acres, excluded from the Ayacut

(b) Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Range of operation head 85 to 105 feet and mean power draft 14,440 cusecs, annual 455.34 T.M.C. 8 units of 37,500 kW. each

20. Proposed disposal of tail-race waters

Tail-race waters will be let into the river

21. Quantum of river supplies available in relation to withdrawals

As per item 18 above; the project takes into account a dry weather flow for 7 months of 10,000 cusecs from reservoirs to be constructed upstream in other States

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. to 27. Not available

28. Main features and purpose of the scheme

Power generation, conversion of rain-fed cultivation to irrigated agriculture reclamation of forest and waste lands

PENGANGA PROJECT

14C.3-G.7-A.14

1. **Name of State** Andhra Pradesh (formerly in Hyderabad)

2. **Scope of the scheme or system**

   Irrigation scheme ; flow-cum-storage ; Ayacut 30,000 acres

3. **Source of supply**

   Penganga at Hattighat/Pranhita/**Godavari**

   Utilisation upstream : nil

4. **Description of the reservoir or tank**

Live storage	3.73 T.M.C.
Dead storage	6.46 ,,
Carry-over	Nil
Annual reservoir losses	2.55 T.M.C.
Filling period	June to October
Depletion period	November to May
Catchment area	7,280 square miles
Area submerged	14,000 acres
Full reservoir level	R. L. 760
Minimum pond level	R.L. 750

5. **Description of the headworks**

   Dam : masonry, 100 feet long, 60 feet high, with earthen, flanks right and left 460 feet and 330 feet long respectively, 50 feet high

   Spillway : 1,220 feet long, 17 crest gates, each 60 feet ×20 feet, total capacity 554,000 cusecs

   Head sluice: 6 vents, 3 feet×4.75 feet each

6. **Description of the canal**

   Penganga Right Canal (contour) ; 26 miles long ; perennial ; unlined ; authorised capacity **513 cusecs**

7. **(a) Nature and investigations carried out up-to-date**

   Detailed investigations yet to be undertaken, present proposal based on topo-sheet studies

   (b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area culturable commanded area and Ayacut, district-wise

District Adilabad

G.C.A.	61,300	acres
C.C.A.	60,500	,,
Ayacut	30,000	,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation on Ayacut*
Perennial	5,000 acres	16.7 percent
Kharif	15,000 ,,	50.0 ,,
Rabi	10,000 ,,	33.3 ,,
Total	**30,000 ,,**	**100.0 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..............*inches*..........			......*T.M.C.*......	
June	7.0	8.5	2.1	0.37	0.28
July	13.4	17.4	8.5	0.82	0.60
August	8.7	16.2	6.5	0.86	0.63
September	6.4	13.4	3.7	1.03	0.77
October	2.9	6.2	0.2	0.92	0.67
November	0.8	4.7	Nil	0.48	0.36
December	0.3	0.7	,,	0.38	0.28
January	0.3	0.9	,,	0.28	0.20
February	0.7	2.4	,,	0.26	0.21
March	0.5	0.7	,,	0.25	0.18
April	0.8	2.1	,,	0.25	0.19
May	0.6	1.2	,,	Nil	—
Total	**42.4**			**5.90**	

12. Not available

13. **(a) Characteristics of soils in the commanded area**

Black cotton and sandy loam

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif			*Rabi*				*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Paddy	*Jowar*		*Jowar*	*Maize*	*Others*		
1.0	5.0	1.5	84.5	8.0	1.5	23.4	24.9

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Abi*		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Garden		*Paddy*		*Others*		
16.7	5.0	50.0	15.0	33.3	10.0	30.0

(b) Are there any rules for regulating crop pattern?

Wet and garden area will be localised

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Garden	*Abi*	*Rabi*	*Garden*	*Abi*	*Rabi*	*Overall*
61	71	174	10.8	4.6	1.4	4.5

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Two tanks irrigating 100 acres ; not included in the Ayacut

(b) Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power ; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Submergence in Andhra Pradesh	8,000 acres
Submergence in Maharashtra	6,000 acres

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain fed cultivation to irrigated agriculture

LOWER MACHKUND HYDRO-ELECTRIC PROJECT 15C.3-G.12-A.15

1. **Name of State** Andhra Pradesh (formerly in Madras)

2. **Scope of the scheme or system**
Hydro electric scheme; flow-cum-storage; power, 30,000 kW. installed (base load station)

3. **Source of supply**
Sileru at Sendiguda/Sabari/Godavari
Utilisation upstream :
existing : Machkund
proposed : nil

4. **Description of the reservoir or tank**

Live storage	3.30 T.M.C.
Dead storage	3.00 ,,
Carry-over	Nil
Annual reservoir losses	0.20 T.M.C.
Filling period	July to October
Depletion period	November to June
Catchment area	891 square miles
Area submerged	1,472 acres
Full reservoir level	R.L. 1,739
Dead storage level	R.L. 1,670

5. **Description of the headworks**
Dam : masonry, 3,500 feet long, 239 feet high
Spillway : ogee, 8 gates, 60 feet x 25 feet each, total capacity 206,200 cusecs
Outlets : 2 power pipes, 8.5 feet diameter, capacity 750 cusecs each

6. Not applicable

7. (a) **Nature of investigations carried out up-to-date**
Reservoir survey completed; detailed investigations for the dam site to be undertaken
(b) **Actual or probable date of beginning of construction** IV Plan

8. **Probable date of beginning of operation** V Plan

9. to 18. Not applicable

POWER ASPECTS

19. **River supply proposed to be diverted and operation head**
Operation head : 185 feet to 254 feet
Mean power draft : 1,475 cusecs, annual 46.7 T.M.C.

20. **Proposed disposal of tail-race waters**

Tail race waters will be let into the river

21. **Quantum of river supplies available in relation to withdrawals**

River supply data not available

GENERAL

22. **Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns**

Nil

23. **Extent and type of area submerged by reservoir**

977 acres of forests land in Andhra Pradesh, 495 acres of forests land in Orissa

24.-25. Not available

26. Not applicable

27. Not available

28. **Main features and purpose of the scheme** Power generation

LOWER SILERU HYDRO-ELECTRIC PROJECT

16C.3-G.12-A.16

1. **Name of State** Andhra Pradesh (formerly in Madras)

2. **Scope of the scheme or system**

Hydro electric scheme; flow-cum-storage; power, 210,000 kW. installed

3. **Source of supply**

Sileru at Donkarayi/Sabari/**Godavari**
Utilisation upstream :
existing : nil
proposed : considerable

4. **Description of the reservoir or tank**

Live storage	12.90 T.M.C.
Dead storage	4.50 ,,
Carry-over	Nil
Annual reservoir losses	1.17 T.M.C.
Filling period	July to October
Depletion period	November to June
Catchment area	2,254 square miles
Area submerged	7,268 acres
Full reservoir level	R.L. 1,040
Dead storage level	R.L. 970

5. **Description of the headworks**

Dam :	masonry 1,840 feet long, 220 feet high, with earth bunds at the flanks
Spillway :	ogee, 9 gates, 40 feet x 40 feet each, total capacity 380,000 cusecs
Outlets ;	2 power pipes, 11 feet diameter, capacity 1,350 cusecs each

6. **Description of the canal**

Power Channel (contour); left bank; 12 miles long, lined; authorised capacity **4,000 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Investigations completed, project report under preparation

(b) **Actual or probable date of beginning of construction** IV Plan

8. Not available

9. **to 18.** Not applicable

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Power House No. I (at the toe of the dam)

Range of operation head 70 feet to 140 feet

Mean power draft 2,675 cusecs, annually **84.36 T.M.C.**

Power House No. II (at the tail of the Power Canal)

Operation head 620 feet

Mean power draft 2,675 cusecs, annually **84.36 T.M.C.**

20. Proposed disposal of tail-race waters

Tail-race waters from Power House No. II will be let into the river

21. Quantum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power ; water supply (month-wise), if any, required for these aspects ; financial returns

Nil

23. Extent and type of area submerged by reservoir

3,800 acres of forest land in Andhra Pradesh and 3,468 acres of forest land in Orissa

24.-25. Not available

26. Not applicable

27. Not available

28. Main features and purpose of the scheme Power generation

WARDHA SCHEME

17C.3-G.8-Ma.1

1. Name of State Madhya Pradesh

2. Scope of the scheme or system

Multipurpose scheme ; flow-cum-storage; irrigation, C.C.A. 5,200 acres ; power, 2,000 kW. installed

3. Source of supply

Wardha, near Chichonda/Godavari

Utilisation upstream :

existing : nil

proposed : minor schemes only

4. Description of the reservoir or tank (Tentative)

Live storage	1.80 T.M.C.
Dead storage	0.09 ,,
Carry-over	0.30 ,,
Annual reservoir losses	0.35 ,,
Filling period	June to September
Depletion period	July to June
Catchment area	54 square miles
Area submerged	1,900 acres
Full reservoir level	R.L. 2,320
Dead storage level	R.L. 2,250

5. Description of the headworks

Dam : 6,000 feet long, 100 feet high, other particulars not available

Spillway : particulars not available

Outlets : particulars not available

Pick-up weir: particulars not available

6. Not available

7. (a) Nature of investigations carried out up-to-date

Field investigations not yet undertaken, present proposal based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Chhindwara

G.C.A.	7,500 acres
C.C.A.	5,200 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	300 acres	5.8 percent
Kharif	3,000 ,,	57.7 ,,
Rabi	3,000 ,,	57.7 ,,
Total	**6,300** ,,	**121.2** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	inches			*T.M.C.*	
June	3.7	13.6	0.9	0.01	Not available
July	9.8	22.5	5.0	0.03	
August	8.8	18.7	2.6	0.03	
September	5.7	15.6	0.3	0.07	
October	2.1	6.1	0.1	0.10	
November	0.7	8.1	Nil	0.02	
December	0.2	1.7	,,	0.04	
January	0.6	4.2	,,	0.05	
February	0.6	5.8	,,	0.05	
March	0.8	3.6	,,	0.01	
April	0.5	3.5	,,	0.02	
May	0.7	3.4	,,	0.02	
Total	**34.2**			0.45	

12. to 14. Not available

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*		*Total cropped area (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane		*Paddy*		*Wheat*		
4.8	0.3	47.6	3.0	47.6	3.0	6.3

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
80	136	206	7.6	1.8	0.9	1.6

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Range of operation head (feet)	*Supply passing through turbines (cusecs)*
Gross operation head 500 feet	30 cusecs to 35 cusecs Annual say **1.00** T.M.C.

20. Proposed disposal of tail-race waters

The tail-race water will in part be diverted for irrigation

21. Quantum of river supplies available in relation to withdrawals

Same as per item 18 above

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submerged area within Madhya Pradesh, half culturable; 2.5 miles of Nagpur-Itarsi Railway line and about 2 miles of Nagpur-Badnur road will be submerged

24. to 27. Not available

28. Main features and purpose of the scheme Irrigatian and Power development

UPPER WAINGANGA PROJECT 18C.3-G.9-Ma.2

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Two alternative proposals are under consideration :

(a) Purely irrigation scheme ; flow-cum-storage ; new C.C.A. 135,600 acres plus improvements to Wainganga Canal (**9A-G.9-Ma.1**) to increase its annual irrigation from an existing maximum of 66,300 acres to 110,000 acres

(b) Irrigation-cum-power scheme ; irrigation as in (a) above except that the annual irrigation on the Wainganga Canal will be 150,000 acres instead of 110,000 acres and generation of 6,000 to 7,500 kW. power, at 60 percent load factor, at the toe of the dam

3. **Source of supply**

Wainganga at Bhimgarh and Dhuti/**Godavari**

Utilisation upstream : medium schemes, existing and proposed

4. **Description of the reservoir or tank (at Bhimgarh)**

	Irrigation scheme	Irrigation-cum-power scheme
Live storage	11.96 T.M.C.	18.30 T.M.C.
Dead storage	3.44 ,,	3.44 ,,
Carry-over	Nil	Nil
Annual reservoir losses	2.00 T.M.C.	2.00 T.M.C.
Filling period	July to September	July to September
Depletion period	October to June	October to June
Catchment area	775 square miles	775 square miles
Area submerged	11,300 acres	13,800 acres
Full reservoir level	R.L. 1,700	R.L. 1,711
Minimum pond level	R.L. 1,661	R.L. 1,661

5. **Description of the headworks**

Dam : earthen, 132—143 feet high

Spillway : capacity 400,000 cusecs

6. Description of the canals

Upper Wainganga Right Bank Canal; taking off directly from above the dam (contour); 24 miles long; perennial; unlined; capacity **300 to 350 cusecs**

Wainganga Left Bank Canal; taking off from Dhuti weir (contour); 53 miles long; perennial unlined; capacity **500 to 550 cusecs**

Existing Wainganga Right Bank Canal; taking off from Dhuti weir (contour); 27.5 miles long; perennial; unlined; capacity **900 to 1,000 cusecs**

7. (a) Nature of investigations carried out up-to-date

All field investigations comprising survey of dam site, reservoir surveys, geological investigations and soil survey of the commanded areas, canal surveys, well observations and hydrological observations have been completed. Designs are under preparation

(b) Actual or probable date of beginning of construction

Not available (project report is expected to be ready in 1962, construction will be taken up in IV Plan)

8. Probable date of beginning of operation 5 years after construction begins

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

Item	*Names of districts*			*Total*
	Seoni	*Balaghat*	*Existing Wainganga Right Bank Canal*	
	Upper Wainganga Right Bank Canal	*Wainganga Left Bank Canal*		
	..........*thousand acres*..........			
G.C.A.	92.0	74.0	125.1	291.1
C.C.A.	69.0	66.6	106.6	242.2
Deduct existing C.C.A. under Wainganga Canal **9A-G.9-Ma.1**			106.6	106.6
Additional C.C.A.	69.0	66.6	—	135.6

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated			*Intensity of irrigation*		
	Upper Wainganga Right Bank Canal	*Wainganga Left Bank Canal*	*Existing Wainganga Right Bank Canal*	*Upper Wainganga Right Bank Canal*	*Wainganga Left Bank Canal*	*Existing Wainganga Right Bank Canal*
	......*thousand acres*....			......*percentage*..........		
Alternative (a)						
Perennial	3.2	2.2	10.0	4.6	3.3	9.4
Kharif	19.8	36.0	85.0	28.7	54.1	79.6
Rabi	23.0	6.8	15.0	33.4	10.2	14.1
Total	**46.0**	**45.0**	**110.0**	**66.7**	**67.6**	**103.1**
Alternative (b)						
Perennial	3.2	2.2	15.0	4.6	3.3	14.1
Kharif	19.8	36.0	85.0	28.7	54.1	79.6
Rabi	23.0	6.8	50.0	33.4	10.2	**46.9**
Total	**46.0**	**45.0**	**150.0**	**66.7**	**67.6**	**140.6**
Deduct existing irrigation under Wainganga Canal **9A-G.9-Ma.1**			62.3			
Additional irrigation						
Alternative (a)	46.0	45.0	47.7			
Alternative (b)	46.0	45.0	87.7			
Total (a)		**138.7**				
(b)		**178.7**				

11. Normal rainfall and river supply proposed to be diverted

Alternative (a) (i) Upper Wainganga Right Bank Canal

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor (capacity 350 cusecs)*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	........*inches*	....		....*T.M.C.*....	
June	7.5	20.9	Nil	0.11	0.12
July	18.5	26.3	9.7	0.17	0.18
August	14.5	30.1	7.9	0.21	0.22
September	7.3	23.7	1.2	0.53	0.58
October	2.3	8.9	Nil	0.65	0.69
November	0.8	5.7	,,	0.14	0.15
December	0.3	3.5	,,	0.36	0.38
January	0.8	5.2	,,	0.41	0.44
February	0.9	4.1	,,	0.41	0.48
March	1.0	5.4	,,	0.17	0.18
April	0.8	5.9	,,	0.17	0.19
May	0.5	7.5	,,	0.17	0.18
Total	**55.2**			**3.50**	

(ii) Wainganga Left Bank Canal

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor (capacity 500 cusecs)*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	........*inches*	....		.....*T.M.C.*.......	
June	7.5	30.1	0.1	0.08	0.06
July	22.5	37.8	8.7	0.34	0.23
August	17.3	35.0	7.6	0.40	0.27
September	9.5	20.6	0.9	0.90	0.63
October	2.3	10.5	Nil	1.13	0.77
November	0.5	4.9	,,	0.19	0.13
December	0.2	2.6	,,	0.13	0.09
January	0.7	2.9	,,	0.17	0.12
February	0.9	4.6	,,	0.17	0.13
March	0.8	5.4	,,	0.11	0.07
April	0.6	5.3	,,	0.11	0.08
May	0.5	1.6	,,	0.11	0.07
Total	**63.3**			**3.84**	

(iii) Existing Wainganga Right Bank Canal

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor (capacity 1,000 cusecs)*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*..............			......*T.M.C*.......	
June	6.0	20.2	1.0	0.35	0.14
July	20.0	31.7	7.2	0.74	0.28
August	15.2	33.2	7.9	0.92	0.34
September	8.5	18.9	1.8	2.21	0.85
October	2.4	11.4	Nil	2.76	1.03
November	0.5	5.6	,,	0.54	0.22
December	0.1	2.6	,,	0.37	0.14
January	0.7	6.2	,,	0.54	0.20
February	0.9	4.1	,,	0.54	0.22
March	0.6	2.4	,,	0.52	0.19
April	0.5	5.1	,,	0.52	0.20
May	0.4	3.0	,,	0.52	0.19
Total	**55.8**			**10.53**	
Deduct existing diversion under Wainganga Canal **9.A.G.9-Ma.1**				4.96	
Additional diversion				5.57	
Additional diversion (for all canals)				12.91	

Alternative (b)

same as above, except that the annual diversion by the Wainganga Canal will be 17.29 T.M.C. instead of 10.53 T.M.C.

Additional diversion (for all canals)
Alternative (b) 19.67 T.M.C.

12. (a) Depth of sub-soil water table below ground level in the area proposed to be irrigated

On the Upper Wainganga Right Bank Canal the depth of sub-soil water below ground varies from 34 feet in April to 8 feet in August.

On the Wainganga Left Bank Canal, this depth varies from 35 feet in May to 16 feet in September. For the Existing Wainganga Right Bank Canal, information is not available

(b) Not available

(c) Has any study been made of the likely effect of the introduction of irrigation on sub-soil water table?

The surface and sub-surface drainage being fairly good, no water logging is expected

13. (a) Characteristics of soils in the commanded area

The soil over the major part of the respective areas, to come under the command of each of the proposed Left Bank Canal and the Upper Wainganga Right Bank Canal, has an effective depth well over 3 feet, a low soluble salt content and pH below 8.5 generally, clayey to clayey loam texture, content of calcium carbonate not exceeding 1.5 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics?

The river water to feed the irrigation canals has a low soluble salt content, the predominent chemical constituents being carbonates of calcium and magnesium

14. Existing pattern of cultivation in the area proposed to be irrigated

	Kharif			*Rabi*			*Total cropped area (T. acres)*
	Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
	Paddy	*Others*		*Wheat*	*Others*		
Upper Wainganga Right Bank Canal	22.9	14.0	22.6	30.9	32.2	38.6	61.2
Wainganga Left Bank Canal	48.5	6.2	59.5	1.3	44.0	49.2	108.7
Existing Wainganga Right Bank Canal	85.0	5.0	88.2	3.0	7.0	9.8	98.0

15. (a) Proposed pattern of irrigated cultivation

Alternative (a)

	Perennial		*Kharif*		*Rabi*			*Grand Total (T. acres)*
	Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
	Sugarcane		*Paddy*		*Paddy*	*Wheat*		
Upper Wainganga Right Bank Canal	7.0	3.2	43.0	19.8	—	50.0	23.0	46.0
Wainganga Left Bank Canal	4.9	2.2	80.0	36.0	—	15.1	6.8	45.0
Existing Wainganga Right Bank Canal	9.0	10.0	77.3	85.0	—	14.1	15.0	110.0

In alternative (b) the crop pattern for the Existing Wainganga Right Bank Canal will be as follow:—

10.0	15.0	56.7	85.0	20.0	13.3	50.0	150.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)					*Delta (feet)*				
Perennial	*Kharif*	*Rabi*			*Perennial*	*Kharif*	*Rabi*		
		Wheat	*Paddy*	*Green manure*			*Wheat*	*Paddy*	*Green manure*
80	136	207	60	227	7.6	1.8	0.9	4.0	0.4

Overall Delta Alternative (a):—2.0 feet; Alternative (b):—2.3 feet

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Upper Wainganga Right Bank Canal: Nil

Wainganga Left Bank Canal: Not available

Existing Wainganga Right Bank Canal: minor works irrigating about 11,000 acres

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

In case the scheme is taken up as multipurpose scheme, the average power draft will be 500 to 600 cusecs, through the turbines. The operation head will vary from 80 to 130 feet approximately, the minimum during June and maximum during October.

Monthwise details of power draft are not available

20. Proposed disposal of tail-race waters

In case the scheme is taken up as multipurpose scheme, the tail-race waters are proposed to be picked up at existing Dhuti weir for irrigation, on Wainganga Left Bank Canal, and Existing Wainganga Left Bank Canal. The flow released (500 to 600 cusecs) sufficient for irrigation requirements for the months, November to June and partly for October (for October part of the requirements will be met by extra release from reservoir)

21. Quantum of river supplies available in relation to withdrawals

See item 18 above

GENERAL

22. Aspects other than irrigation and power ; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by the reservoir

Area to be submerged lies entirely in Madhya Pradesh. It consists of cultivated land, forest and waste land in the proportion of 50 to 55 percent, 4 to 5 percent and ,40 to 45 percent respectively.

24. to 27. Not available

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture, thereby improving crop type and yield over an area of about 150,000 acres.

DEHRIA NALLA SCHEME

19C.3-G.9-Ma.3

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 5,100 acres

3. **Source of supply**

Dehria Nalla near Alonia/Wainganga/**Godavari**

Upstream utilisation :
existing: nil
proposed: minor tanks to irrigate about 1,000 acres

4. **Description of the reservoir or tank (Tentative)**

Live storage	0.15 T.M.C.
Dead storage	0.01 T.M.C.
Carry-over	Nil
Annual reservoir losses	0.03 T.M.C.
Filling period	June to September
Depletion period	July to February
Catchment area	10.6 square miles
Area submerged	180 acres
Full reservoir level	R.L. 1,820
Minimum pond level	R.L. 1,800

5. **Description of the headworks**

Dam :	earthen, 2,000 feet long, 70 feet high
Spillway :	particulars not available
Outlets :	particulars not available

6. **Description of the canals**

Right Bank Canal (contour); two seasonal; unlined; authorised capacity **12 cusecs;** length not available

Left Bank Canal (contour); two seasonal; unlined; authorised capacity **28 cusecs;** length not available

7.(a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken, present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Seoni	
G.C.A.	6,800 acres
C.C.A.	5,100 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	3,000 acres	58.8 percent
Rabi	1,500 ,,	29.4 ,,
Total	**4,500** ,,	**88.2** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	....	*inches*.............		....*T.M.C.*.....	
June	7.4	19.1	6.0	Nil	—
July	20.3	26.3	9.7	0.03	0.28
August	15.2	30.1	Nil	0.03	0.28
September	7.2	16.7	,,	0.07	0.67
October	2.2	3.9	,,	0.09	0.84
November	0.9	5.3	,,	0.01	0.10
December	0.4	3.5	,,	0.02	0.19
January	0.9	5.2	,,	0.02	0.19
February	1.0	3.5	,,	0.01	0.10
March	1.1	3.8	,,	Nil	—
April	0.8	5.1	,,	,,	—
May	0.5	5.9	,,	,,	—
Total	**57.9**			**0.28**	

12.—13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif				*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops			*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy	*Jowar*	*Others*		*Wheat*	*Others*		
35.6	6.1	7.3	2.5	34.0	17.0	2.6	5.1

Note : *Based on the statistics of the district, as a whole*

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T.acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Wheat*		
66.7	3.0	33.3	1.5	4.5

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Kharif	*Rabi*	*Kharif*	*Rabi*	*Overall*
138	207	1.8	0.9	1.4

17.—18. Not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

180 acres, mostly culturable

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

BIJNA PROJECT

20C.3-G.9-Ma.4

1. Name of State Madhya Pradesh

2. Scope of the scheme or system

Irrigation scheme; flow-cum-storage; C.C.A. 52,500 acres

3. Source of supply

(i) Bijna near Sakri/Wainganga/**Godavari**; (ii) Bhagora Nala/Wainganga/**Godavari**

Utilisation upstream :

existing : nil

proposed : minor works for irrigation of 6,000 acres

4. Description of the reservoir or tank

Live storage	4.43 T.M.C.
Dead storage	0.15 ,,
Carry-over	Not available
Annual reservoir losses	0.46 T.M.C.
Filling period	July to September
Depletion period	July to June
Catchment area	142 square miles
Area submerged	3,500 acres
Full reservoir level	R.L. 1,630
Minimum pond level	R.L. 1,570

5. Description of the headworks

(i) Dam at Sakri : 4,600 feet long, 125 feet high

Spillway: capacity 145,800 cusecs; other particulars not available

Outlets: particulars not available

(ii) Diversion weir on Bhagora Nala for Feeder Canal

6. Description of the canals

Bijna Canal (contour); left flank; 32 miles long; perennial; unlined; authorised capacity **538 cusecs**

Feeder Canal at Bhagora diversion weir (contour); right flank; 1 mile long out falling into Bijna Canal at mile 12.

7.(a) Nature of investigations carried out up-to-date

Field investigations not yet undertaken, present proposals based on topo-sheet studies

(b) Actual or probable date of beginning of construction IV Plan or later

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Seoni	
G.C.A.	70,000 acres
C.C.A.	52,500 ,,

10. Area proposed to be irrigated and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	4,200 acres	8.0 percent
Kharif	37,800 ,,	72.0 ,,
Rabi	19,500 ,,	37.0 ,,
Total	**61,500 ,,**	**117.0 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	.........*inches*..........			....*T.M.C.*......	
June	7.4	19.1	Nil	0.15	0.11
July	20.3	26.3	9.7	0.33	0.23
August	15.2	30.1	Nil	0.41	0.28
September	7.2	15.7	,,	0.98	0.70
October	2.2	8.9	,,	1.22	0.85
November	0.9	5.3	,,	0.24	0.17
December	0.4	3.5	,,	0.55	0.38
January	0.9	5.2	,,	0.70	0.49
February	1.0	3.5	,,	0.77	0.59
March	1.1	3.8	,,	0.66	0.46
April	0.9	5.1	,,	0.22	0.16
May	0.5	5.9	,,	0.22	0.15
Total	**58.0**			**6.45**	

12.—13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Perennial		*Kharif*				*Rabi*			
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Total cropped area (T. acres)*
Sugarcane		*Paddy*	*Jowar*	*Others*		*Wheat*	*Gram*		
0.5	0.2	34.8	6.1	7.2	17.8	34.4	17.0	19.0	37.0

**cultivated area 37,000 acres assumed as 70 percent of the C.C.A. 52,500 acres; crop pattern based on the statistics for the district as a whole*

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*				
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Grand Total (T. acres)*
Sugarcane		*Paddy*		*Paddy*	*Wheat*	*Green manure*		
6.8	4.2	61.4	37.8	16.3	12.2	3.3	19.5	61.5

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)					*Delta (feet)*					
Perennial	*Kharif*	*Rabi*			*Perennial*	*Kharif*	*Rabi*			*Overall*
		Wheat	*Paddy*	*Green manure*			*Wheat*	*Paddy*	*Green manure*	
80	136	207	60	227	7.6	1.8	0.9	4.0	0.4	2.4

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

3,500 acres (of which 75 percent is culturable land), in Madhya Pradesh

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

SALIWARA SCHEME

21C.3-G.9-Ma.5

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**
Irrigation scheme; flow-cum-storage; C.C.A. 8,700 acres

3. **Source of supply**
A tributary near Saliwara/Wainganga/Godavari
Utilisation upstream :
existing : nil
proposed: minor schemes for irrigation of 500 acres

4. **Description of the reservoir or tank** (Tentative)

Live storage	0.43 T.M.C.
Dead storage	0.02 „
Carry-over	Nil
Annual reservoir losses	0.09 T.M.C.
Filling period	June to September
Depletion period	July to February
Catchment area	13.1 square miles (diversion of supplies from an adjacent catchment area of 5.6 square miles also proposed)
Area submerged	544 acres
Full reservoir level	R.L. 1,735
Minimum pond level	R.L. 1,690

5. **Description of the headworks (Tentative)**
Dam : earthen, 2,100 feet long, 65 feet high
Spillway: particulars not available
Outlets: particulars not available

6. **Description of the canal**
Debri Canal (initially contour, then on ridge); right bank; 10 miles long; two seasonal; unlined; authorised capacity 53 cusecs

7. (a) **Nature of investigations carried out up-to-date**
Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

Item	Names of districts		Total
	Seoni	*Mandla*	
	..................*thousand acres*........		..
G.C.A.	7.5	5.0	12.5
C.C.A.	5.2	3.5	8.7

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	4,000 acres	46.0 percent
Rabi	1,500 ,,	17.2 ,,
Total	**5,500 ,,**	**63.2 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*..........			......*T.M.C.*......	
June	8.4	Not available		Nil	—
July	18.6	,,		0.03	0.21
August	16.2	,,		0.04	0.28
September	7.8	,,		0.09	0.66
October	1.9	,,		0.12	0.85
November	0.5	,,		0.02	0.15
December	0.4	,,		0.05	0.35
January	0.8	,,		0.05	0.35
February	1.0	,,		0.05	0.39
March	1.1	,,		Nil	—
April	0.7	,,		,,	—
May	0.6	,,		,,	—
Total	**58.0**			**0.45**	

12.—13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

	Perennial		*Kharif*			*Rabi*			*Total cropped area (T. acres)*
	Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
	Sugarcane		*Paddy*	*Others*		*Wheat*	*Others*		
Seoni	0.5	Negligible	34.8	13.4	1.6	34.3	17.0	1.7	3.3
Mandla	4.6	0.1	50.0	13.6	1.4	22.0	9.8	0.7	2.2
Total		**0.1**			**3.0**			**2.4**	**5.5**

15.(a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Wheat*		
72.7	4.0	27.3	1.5	5.5

(b) **Are there any rules for regulating crop pattern ?** No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Kharif	*Rabi*	*Kharif*	*Rabi*	*Overall*
136	207	1.8	0.9	1.9

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

544 acres (of which about 60 percent is cultivated), in Madhya Pradesh

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

HALON PROJECT

22C.3-G.9-Ma.6

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

   Irrigation scheme; flow-cum-storage; C.C.A. 9,600 acres

3. **Source of supply**

   Halon river at Salewara/Wainganga/**Godavari**
   Utilisation upstream :
   existing : nil
   proposed: minor schemes to irrigate 1,000 acres

4. **Description of the reservoir or tank (Tentative)**

Live storage	0.65 T.M.C.
Dead storage	0.06 ,,
Carry-over	Nil
Annual reservoir losses	0.13 T.M.C.
Filling period	June to September
Depletion period	July to February
Catchment area	21.2 square miles
Area submerged	960 acres
Full reservoir level	R.L. 1,860
Minimum pond level	R.L. 1,830

5. **Description of the headworks**

   Dam: earthen 3,000 feet long, 70 feet high
   Spillway: particulars not available
   Outlets: particulars not available

6. **Description of the canal**

   Halon Canal (contour); right bank; 6 miles long; two-seasonal; unlined ; authorised capacity 100 cusecs

7.(a) **Nature of investigations carried out up-to-date**

   Field investigations not yet under taken; present proposals based on topo-sheet studies

(b) **Actual or probable date of beginning of construction** IV Plan or later

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

   District Seoni

G.C.A.	12,000 acres
C.C.A.	9,600 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	6,000 acres	62.5 percent
Rabi	6,000 „	62.5 „
Total	**12,000** „	**125.0** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
	.........*inches*	....		....*T.M.C.*......	
June	5.8	15.4	Nil	Nil	—
July	14.5	29.4	6.3	0.05	0.19
August	12.4	23.3	3.0	0.07	0.26
September	6.9	22.6	Nil	0.14	0.54
October	2.0	8.3	„	0.18	0.67
November	0.6	6.7	„	0.03	0.12
December	0.2	2.3	„	0.14	0.52
January	0.8	4.4	„	0.17	0.63
February	1.1	4.5	„	0.20	0.83
March	0.9	5.3	„	0.10	0.37
April	0.2	5.9	„	Nil	—
May	0.4	7.0	„	„	
Total	**45.8**			**1.08**	

12.—13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Kharif				*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops			*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy	*Jowar*	*Others*		*Wheat*	*Gram*		
34.8	7.3	6.7	3.9	34.2	17.0	4.1	8.0

**taken the same as that of the district as a whole*

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*			
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Grand Toalt (T. acres)*
Paddy		*Wheat*	*Paddy*		
50.0	6.0	25.0	25.0	6.0	12.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Kharif	*Rabi*		*Kharif*	*Rabi*		*Overall*
Paddy	*Wheat*	*Paddy*	*Paddy*	*Wheat*	*Paddy*	
136	207	60	1.8	0.9	4.0	2.1

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submerged area lies in Madhya Pradesh; 3/4th of it is culturable

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

THANWAR SCHEME

23C.3-G.9-Ma.7

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 9,000 acres

3. **Source of supply**

Thanwar at Sangonia/Wainganga/**Godavari**

Utilisation upstream:

existing: nil

proposed: minor schemes to irrigate 3,000 acres

4. **Description of the reservoir or tank (Tentative)**

Live storage	0.60 T.M.C.
Dead storage	0.03 „
Carry-over	Nil
Annual reservoir losses	0.17 T.M.C.
Filling period	June to September
Depletion period	July to February
Catchment area	32 square miles
Area submerged	900 acres
Full reservoir level	R.L. 1,640
Minimum pond level	R.L. 1,625

5. **Description of the heardworks**

Particulars not yet worked out; height of dam 60 feet

6. **Description of the canal**

Thanwar Canal (contour); left bank; 9 miles long; two-seasonal; unlined; authorised capacity **112 cusecs**

7.(a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Mandla	
G.C.A.	12,800 acres
C.C.A.	9,000 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	6,500 acres	72.2 percent
Rabi	5,500 „	61.1 „
Total	**12,000** „	**133.3** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*............			......*T.M.C.*......	
June	8.4	Not	available	Nil	—
July	18.6	„	„	0.06	0.20
August	16.2	„	„	0.07	0.23
September	7.8	„	„	0.15	0.52
October	1.9	„	„	0.20	0.67
November	0.5	„	„	0.03	0.10
December	0.4	„	„	0.16	0.53
January	0.8	„	„	0.20	0.67
February	1.0	„	„	0.23	0.85
March	1.1	„	„	0.18	0.60
April	0.7	„	„	Nil	—
May	0.6	„	„	„	—
Total	**58.0**			**1.28**	

12. Not available

13. (a) **Characteristics of soils in the commanded area**

No soil surveys carried out so far

(b) **Has any study been made of the likely effect of the introduction of irrigation on soil characteristics?**

No

14. **Existing pattern of cultivation* in the area proposed to be irrigated**

Perennial		*Kharif*			*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane		*Paddy*	*Others*		*Wheat*	*Others*		
2.0	0.16	50.0	15.0	5.2	22.0	11.0	2.64	8.0

* *on the basis of district averages*

15. (a) **Proposed pattern of irrigated cultivation**

Kharif		*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy		*Wheat*	*Paddy*		
54.2	6.5	12.5	33.3	5.5	12.0

(b) **Are there any rules for regulating crop pattern?** No

16. **Duty and Delta at canal head (as anticipated)**

Duty (acres per mean cusec)			*Delta (feet)*			
Kharif	*Rabi*		*Kharif*	*Rabi*		*Overall*
Paddy	*Wheat*	*Paddy*	*Paddy*	*Wheat*	*Paddy*	
136	207	60	1.8	0.9	4.0	2.4

17. Not available

18. **Quantum of river supplies available in relation to withdrawals**

River supply data not available

19. **to 21.** Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

About 900 acres will come under submergence; 60 percent of the area is culturable; area of submergence lies in Madhya Pradesh.

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

CHAKOR NALA PROJECT

24C.3-G.9-Ma.8

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 7,000 acres

3. **Source of supply**

Chakor nala at Chamarvahi/Wainganga/Pranhita/**Godavari**

Utilisation upstream :

existing : nil

future minor schemes envisage irrigation of about 2,000 acres

4. **Description of the reservoir or tank**

Live storage	...	0.52 T.M.C.
Dead storage	...	0.03 ,,
Carry-over	...	Not available
Annual reservoir losses	...	0.12 T.M.C.
Filling period	...	June to September
Depletion period	...	July to February
Catchment area	...	11 square miles
Area submerged	...	950 acres
Full reservoir level	...	R.L. 1,560
Minimum pond level	..	R.L. 1,530

5. **Description of the headworks**

Dam : earthen, 7,000 feet long, 50 feet high

Spillway : length 332 feet, capacity 8,206 cusecs

Outlets : capacity 72 cusecs, other particulars not available

6. **Description of the canal**

Chakor Canal (contour); right bank ; 8 miles long ; two seasonal; unlined ; authorised capacity **72 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Mandla

G.G.A.	10,000 acres
C.C.A.	7,000 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	5,000 acres	71.4 percent
Rabi	1,000 „	14.3 „
Total	**6,000 „**	85.7 „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	.........*inches*.............			..... *T.M.C.*......	
June	8.0	20.9	0.2	Nil	—
July	20.0	33.4	6.4	0.04	0.21
August	16.3	28.5	8.0	0.06	0.31
September	5.3	24.0	1.1	0.12	0.64
October	2.0	10.5	Nil	0.16	0.83
November	0.5	3.6	„	0.02	0.11
December	0.4	2.9	„	0.02	0.10
January	0.8	6.0	„	0.01	0.05
February	0.7	3.6	„	0.01	0.06
March	1.0	4.9	„	Nil	—
April	0.6	4.9	„	„	—
May	0.4	7.1	„	„	—
Total	**56.0**			**0.44**	

12.–13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Perennial			*Kharif*			*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane	*Others*		*Paddy*	*Others*		*Wheat*	*Others*		
0.2	1.8	0.1	50.0	15.0	3.25	22.0	11.0	1.65	5.0

**assumed the same as that the district as a whole*

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Wheat*		
83.3	5.0	16.7	1.0	6.0

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Kharif	*Rabi*	*Kharif*	*Rabi*	*Overall*
136	207	1.8	0.9	1.7

17.(a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence in Madhya Pradesh; roughly 70 percent of the area is cultivable; two small villages will be submerged

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

BARGOOR NALLA PROJECT

25C.3-G.9-Ma.9

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 6,300 acres

3. **Source of supply**

Bargoor Nalla near Khari/Wainganga/Pranhita/**Godavari**

Utilisation upstream:
existing : nil
proposed: nil

4. **Description of the reservoir or tank**

Live storage	0.28 T.M.C.
Dead storage	0.02 ,,
Carry-over	Nil
Annual reservoir losses	Not available
Filling period	June to September
Depletion period	July to February
Catchment area	10.5 square miles
Area submerged	540 acres
Full reservoir level	R.L. 1,245
Minimum pond level	R.L. 1,220

5. **Description of the headworks**

Dam : earthen, 2,500 feet long, 53.7 feet high
Spillway : capacity 3,383 cusecs, other particulars not available
Outlets : particulars not available

6. **Description of the canal**

Bargoor Canal (ridge); right bank; 5.2 miles long; two seasonal; unlined; capacity 40 cusecs

7. (a) **Nature of investigations carried out up-to-date** Investigations in progress

(b) **Actual or probable date of beginning of construction** 1962-63

8. **Probable date of beginning of operation** 1965-66

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Seoni

G.C.A.	8,500 acres
C.C.A.	6,300 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	3,000 acres	47.6 percent
Rabi	2,000 "	31.8 „
Total	**5,000 "**	**79.4 „**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*.............			......*T.M.C.*......	
June	6.0	20.2	1.0	Nil	—
July	20.0	31.7	7.2	0.03	0.28
August	15.2	33.2	7.9	0.03	0.28
September	8.5	18.9	1.8	0.07	0.67
October	2.4	11.4	Nil	0.09	0.84
November	0.5	5.6	„	0.01	0.10
December	0.2	2.6	„	0.03	0.28
January	0.6	6.2	„	0.03	0.28
February	0.9	4.1	„	0.03	0.31
March	0.6	2.4	„	Nil	—
April	0.5	5.1	„	„	—
May	0.4	3.0	„	„	—
Total	**55.8**			**0.32**	

12. Not available

13. (a) Characteristics of soils in the commanded area Red and yellow soils

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif				*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops			*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy	*Jowar*	*Others*		*Wheat*	*Gram*		
36.6	6.1	7.3	2.8	34.8	15.2	2.8	5.6

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Wheat and Others*		
60.0	3.0	40.0	2.0	5.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Kharif	*Rabi*	*Kharif*	*Rabi*	*Overall*
136	207	1.8	0.9	1.5

17.(a) Not available

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

540 acres (all forests and hilly), within Madhya Pradesh

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of 5,000 acres of rain-fed cultivation to irrigated agriculture, thereby improving crop quality and yeild.

29. Special features of the scheme

Under correspondence between the State Government and the Planning Commission for inclusion in the III Plan

DHANAI NALA PROJECT

26C.3-G.9-Ma.10

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 10,000 acres

3. **Source of supply**

Dhanai Nala at Bhakunda/Wainganga/Pranhita/**Godavari**

Utilisation upstream :

An area of 1,500 acres may be ultimately irrigated by minor schemes

4. **Description of the reservoir or tank**

Live storage	...	0.70 T.M.C.
Dead storage	...	0.31 ,,
Carry-over .	...	0.14 ,,
Annual reservoir losses	...	0.11 ,,
Filling period	...	June to September
Depletion period	...	July to February
Catchment area	...	58 square miles
Area submerged	...	900 acres
Full reservoir level	...	R. L. 1,202
Minimum pond level	...	R. L. 1,180

5. **Description of the headworks**

Dam :	earthen, 1,800 feet long, 67 feet high
Spillway :	particulars not available
Outlets :	capacity left bank 97 cusecs, right bank 18 cusecs

6. **Description of the canals**

Dhanai Right Bank Canal (contour); 5.5 miles long; two-seasonal; unlined; authorised capacity **18 cusecs**

Dhanai Left Bank Canal (contour); 7.5 miles long; two-seasonal; unlined; authorised capacity 97 **cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken, present proposals based on topo-sheet studies

(b) **Actual or probable date of beginning of construction**

IV or subsequent plan

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area, and culturable commanded area, district-wise

District Seoni

	Right Bank Canal	*Left Bank Canal*	*Total*
		thousand acres	
G.C.A.	2.3	11.2	13.5
C.C.A.	1.5	8.5	10.0

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	8,000 acres	80.0 percent
Rabi	4,000 ,,	40.0 ,,
Total	**12,000** ,,	**120.0** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
		inches		*T.M.C.*	
June	7.4	20.9	Nil	Nil	—
July	20.3	26.3	9.7	0.07	0.23
August	15.2	30.1	7.9	0.09	0.29
September	7.2	23.7	1.5	0.19	0.64
October	2.2	8.9	Nil	0.24	0.78
November	0.9	5.7	,,	0.03	0.10
December	0.4	3.5	,,	0.05	0.16
January	0.9	5.2	,,	0.05	0.16
February	1.0	4.1	,,	0.05	0.18
March	1.1	4.4	,,	Nil	—
April	0.9	5.9	,,	,,	—
May	0.5	7.5	,,	,,	—
Total	**58.0**			**0.77**	

12.—13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Perennial		*Kharif*				*Rabi*			
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Total cropped area (T. acres)*
Others		*Paddy*	*Jowar*	*Others*		*Wheat*	*Others*		
0.5	Negligible	34.3	6.6	7.3	3.4	34.3	17.0	3.6	7.0

**on basis of district averages*

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Wheat		*Wheat*		
66.7	8.0	33.3	4.0	12.0

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Kharif	*Rabi*	*Kharif*	*Rabi*	*Overall*
136	207	1.8	0.9	1.5

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nine tanks, area irrigated is small and no records are being maintained

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

The submerged area of 1,075 acres lies in Madhya Pradesh. About 20 percent is culturable.

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture; increase in intensity of cultivation.

USKAL SCHEME

27C.3-G.9-Ma.11

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Multipurpose scheme; flow-cum-storage; irrigation, C.C.A. 5,600 acres; power, 2,000 kW. installed

3. **Source of supply**

Uskal near Nawatola/Pranhita/Godavari
Utilisation upstream:
existing : nil
proposed: minor schemes only

4. **Description of the reservoir or tank**

Live storage	1.00 T.M.C.
Dead storage	0.10 „
Carry-over	0.20 „
Annual reservoir losses	0.20 „
Filling period	June to September
Depletion period	July to June
Catchment area	14.5 square miles
Area submerged	1,400 acres
Full reservoir level	R.L. 1,970
Dead storage level	R.L. 1,950

5. **Description of the headworks**

Dam:	earthen, 6,000 feet long, 75 feet high
Spillway:	particulars not available
Outlets :	particulars not available
Pickup weir near Markamandi:	particulars not available

6. Not available

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Balaghat

G.C.A.	8,000 acres
C.C.A.	5,600 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	500 acres	8.9 percent
Kharif	3,500 „	62.5 „
Rabi	2,000 „	35.7 „
Total	**6,000** „	**107.1** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	inches			*T.M.C.*	
June	7.5	30.1	0.1	0.02	Not available
July	22.5	37.8	8.7	0.03	
August	17.7	35.0	7.5	0.04	
September	9.5	19.6	0.9	0.09	
October	2.5	10.5	Nil	0.12	
November	3.3	4.9	„	0.02	
December		2.5	„	0.03	
January		6.1	„	0.04	
February		4.6	„	0.04	
March		5.4	„	0.03	
April		5.3	„	0.03	
May		3.7	„	0.03	
Total	**63.0**			**0.52**	

12. to 14. Not available

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane		*Paddy*		*Wheat*		
8.4	0.5	58.3	3.5	33.3	2.0	6.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
80	136	207	7.6	1.8	0.9	2.0

17.(a) Not available

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Range of operation head	*Supply passing through turbines*
Gross operation head 840 feet	
Power output — 2,000 kW. at 60 percent load factor	20 cusecs **Annual 0.63 T.M.C.**

20. Proposed disposal of tail-race waters

The head race tunnel will divert water of Uskal to Katang Nalla. The tail-race waters will be picked up near Markamandi and diverted for irrigation.

21. Quantum of river supplies available in relation to withdrawals

As per item 18 above

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submerged area within Madhya Pradesh; 30 percent culturable and rest forest clad

24. to 27. Not available

28. Main features and purpose of the scheme

Irrigation and power development

NAHARA PROJECT

28C.3-G.9-Ma.12

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Multipurpose project; flow-cum-storage; power, two power houses designed to generate 7,700 kW. between them at 60 percent load factor ; irrigation, 25,000 acres additional in the C.C.A. of Wainganga Left Bank Canal.

3. **Source of supply**

Nahara river at Kurwahi/Wainganga/Pranhita/**Godavari**

Utilisation upstream : nil

4. **Description of the reservoir or tank**

Live storage	4.82 T.M.C.
Dead storage	0.20 „
Carry-over	Not available
Annual reservoir losses	0.70 T.M.C.
Filling period	June to October
Depletion period	July to June
Catchment area	93 square miles
Area submerged	4,000 acres
Full reservoir level	R.L. 1,905
Dead storage level	R.L. 1,847

5. **Description of the headworks**

Dam :	earth-cum-masonry, 3,360 feet long, 115 feet high
Spillway :	300 feet long, capacity 11,200 cusecs
Outlets :	four undersluices, 12 feet x 10 feet each
Pick-up weir near Chargaon :	particulars not available

6. **Description of the canals**

(i) First power channel (contour); left bank; 5 miles long; perennial; lined ; authorised capacity **210 cusecs**

(ii) Second power channel (contour); left bank; 2 miles long; perennial; lined; authorised capacity **210 cusecs**

(iii) Feeder to Wainganga Left Bank Canal

7. (a) **Nature of investigations carried out up-to-date**

Preliminary topographical investigations have been carried out by Madhya Pradesh Electricity Board and geological investigations by Geological Survey of India

8. Not available

9. Gross commanded area and culturable commanded area, district-wise

See Wainganga Left Bank Canal (**18C. 3-G. 9-Ma.2**)

10. Area proposed to be irrigated annually and intensity of irrigation

Wainganga Left Bank Canal
Area proposed to be irrigated

Additional area:	*Kharif*	10,000 acres
	Rabi (Paddy)	12,000 „
	Green manure	3,000 „
	Total	**25,000** „

11. to 18. Not available; annual diversion 2.9 T.M.C.

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Range of operation head (feet)		*Supply passing through turbines (cusecs)*	
Power House I	*Power House II*	*Power House I*	*Power House II*
Constant head	Constant head	Constant supply	Constant supply
365	257	210	210
Total		**6.6 T.M.C.**	**6.6 T.M.C.**

20. Proposed disposal of tail-race waters

2.9 T.M.C. to be diverted for irrigation and the rest will be let down the river

21. Quantum of river supples available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power ; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

The entire submerged area of 4,000 acres lies in Madhya Pradesh and is mostly hilly and forest

24.—25. Not available

26. Not applicable

27. Not available

28. Main features and purpose of the scheme General development

MURMARI PROJECT

29C.3-G.9-Ma.13

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme ; flow-cum-storage ; C.C.A. 32,000 acres

3. **Source of supply**

Pullukasa nadi at Murmari/Bagh/Wainganga/**Godavari**
Utilisation upstream : nil

4. **Description of the reservoir or tank**

Live storage	0.95 T.M.C.
Dead storage	0.06 ,,
Carry-over	Not available
Annual reservoir losses	0.16 T.M.C.
Filling period	July to September
Depletion period	July to June
Catchment area	17 square miles
Area submerged	1,350 acres
Full reservoir level	R.L. 1,246
Minimum pond level	R.L. 1,220

5. **Description of the headworks**

Dam : earthen, 7,500 feet long, 56 feet high
Spillway : particulars not available
Outlets : capacity 124 cusecs; other particulars not available

6. **Description of the canal**

Murmari Canal (contour for first 9 miles, then ridge); right bank; 20 miles long; perennial; unlined; authorised capacity **124 cusecs**

7.(a) **Nature of investigations carried out up-to-date**

Proposals are based on topo-sheet studies and preliminary site investigations

(b) **Actual or probable date of beginning of construction** IV or subsequent Plan

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

District Durg

G.C.A.	46,000 acres
C.C.A.	32,000 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	500 acres	1.6 percent
Kharif	9,000 „	28.1 „
Rabi	1,500 „	4.7 „
Total	**11,000 „**	**34.4 „**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	................*inches*.	....	....	......*T.M.C.*......	
June	7.6	21.8	0.2	0.02	0.06
July	16.8	34.2	6.3	0.08	0.24
August	14.9	32.0	5.7	0.10	0.30
September	6.7	19.9	Nil	0.22	0.69
October	2.1	12.8	„	0.28	0.84
November	0.4	3.9	„	0.05	0.16
December	0.1	1.5	„	0.03	0.09
January	0.4	2.3	„	0.04	0.12
February	0.8	5.5	„	0.04	0.13
March	0.5	4.5	„	0.03	0.09
April	0.4	3.1	„	0.03	0.09
May	0.4	4.4	„	0.03	0.09
Total	**51.1**			**0.95**	

12.—13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Perennial		*Kharif*				*Rabi*				
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Total cropped area (T. acres)*
Others		*Paddy*	*Tur*	*Others*		*Linseed*	*Wheat*	*Others*		
1.8	0.4	66.0	6.0	0.4	16.3	12.3	6.3	7.2	5.8	22.5

**taken the same as that of the district as a whole*

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crop *Others*	*Total area (T. acres)*	*Percentage of principal crops* *Paddy*	*Total area (T. acres)*	*Percentage of principal crops* *Wheat*	*Total area (T. acres)*	
4.6	0.5	81.8	9.0	13.6	1.5	11.0

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
80	136	207	7.6	1.8	0.9	2.0

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

About 8 minor tanks; area irrigated by these tanks is small

(b) Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence of 1,350 acres, lies in Maharashtra; 40 percent cultivable, remaining forests.

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

29. Special features of the scheme

The entire irrigation lies outside the Godavari drainage basin

BAGH RIGHT BANK BRANCH

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 37,000 acres to be treated as part of Bagh River Project (**10C.2-G.9-M.4**)

3. **Source of supply**

Bagh/Wainganga/Pranhita/**Godavari**

4.—5. Same as for **10C.2-G.9-M.4**

6. **Description of the canal**

Bagh Right Bank Branch of the Bagh Left Bank Canal (contour) ; 36 miles long (including 16 miles in Maharashtra); perennial ; unlined ; capacity **385 cusecs**. The Right Bank Branch will cross the river about 6 miles below the head works

7. **(a) Nature of investigations carried out up-to-date**

Only preliminary investigations carried out; detailed surveys have yet to be undertaken

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

District Balaghat

G.C.A.	53,000 acres
C.C.A	37,000 „

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	1,000 acres	2.7 percent
Kharif	26,400 „	71.4 „
Rabi	5,000 „	13.5 „
Total	**32,400** „	**87.6** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	.........*inches*..........			....*T.M.C.*....	
June	9.4	33.1	0.5	0.03	0.03
July	24.1	48.2	9.2	0.23	0.22
August	19.5	45.1	Nil	0.30	0.29
September	10.9	20.6	,,	0.65	0.65
October	2.6	12.4	,,	0.82	0.80
November	0.5	3.7	,,	0.13	0·13
December	0.1	2.8	,,	0.08	0.08
January	0.7	5.9	,,	0.10	0.10
February	1.0	7.8	,,	0.10	0.11
March	0.6	4.1	,,	0.05	0.05
April	0.6	3.5	,,	0.05	0.05
May	0.5	3.0	,,	0.05	0.05
Total	**70.5**			**2.59**	

12.-13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Perennial		*Kharif*			*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane		*Paddy*	*Others*		*Wheat*	*Others*		
1.0	0.3	75.1	2.2	23.2	4.3	17.4	6.5	30.0

* *the crop pattern has been taken to be the same as that of the district as a whole*

15.(a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*			*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane		*Paddy*	*Others*		*Wheat*	*Others*		
3.1	1.0	73.3	8.2	26.4	5.4	10.0	5.0	32.4

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
80	136	207	7.6	1.8	0.9	1.8

17.(a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

The Kharadi tank, recently completed, will extend irrigation facilities to 5,000 acres in the commanded area of Bagh Right Bank Branch.

(b) Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Same as per **10C.2-G.-9-M.4**

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

29. Special features of the scheme

A proposal to make this scheme a joint scheme of Madhya Pradesh and Maharashtra is under consideration of the two Governments. As a joint scheme it may be possible to include in it a C.C.A. of 11,000 acres in Maharashtra.

DEO-AMA-SON SCHEME

31C.3-G.9-Ma.15

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Multipurpose project; flow-cum-storage; irrigation, additional C.C.A. 6,000 acres; power, 20,150 kW. installed

3. **Source of supply**

Deo at Sukalapat/Wainganga/**Godavari**
Ama Nala at Bithli/Deo/Wainganga/**Godavari**
Son at Bhutna/Wainganga/**Godavari**
Little upstream utilisation

4. **Description of the reservoir or tank**

	Deo		*Ama*	*Son*
Live storage (T.M.C.)	5.0		4.5	4.0
Dead storage (T.M.C.)	N.A.		N.A.	N.A.
Carry-over (T.M.C.)	,,		,,	,,
Annual reservoir losses (T.M.C.)	0.7		0.7	0.4
Filling period	June	to	October	
Depletion period	July	to	June	
Catchment area (square miles)	79.7		58.3	63.8
Area submerged (acres)	4,160		4,160	2,560
Full reservoir level (R.L.)	1,855		1,875	1,770
Dead storage level (R.L.)	1,785		1,820	1,690

5. **Description of the headworks**

		Deo	*Ama*	*Son*
Dam :	type	N.A.	N.A.	N.A.
	length	2,000 feet	7,000 feet	6,000 feet
	height	105 feet	125 feet	140 feet

Spillway : particulars not available
Outlets : particulars not available

6. **Description of the canal**

Capacity **400 cusecs**, other particulars not available

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken, present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Balaghat

G.C.A.	same as Bagh Right Bank Branch (**30C.3-G-9-M.14**)
C.C.A.	6,000 acres (additional)

10. Area proposed to be irrigated annually

	New area	*Additional area under Bagh Right Bank Branch*
Perennial	1,000 acres	1,000 acres
Khari, (Paddy)	5,000 ,,	—
Rabi ,,	3,000 ,,	12,000 acres
Green manure	1,000 ,,	2,000 ,,
Total	**10,000** ,,	**15,000** ,,

11. Normal rainfall and river supply proposed to be diverted (additional)

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	........*inches*......			....*T.M.C.*.......	
June	6.6	18.4	0.9	0.07	0.07
July	21.1	32.2	5.9	0.04	0.04
August	17.5	32.6	8.4	0.05	0.05
September	8.9	21.2	0.7	0.15	0.14
October	2.6	8.6	Nil	0.19	0.18
November	0.8	4.5	,,	0.06	0.06
December	0.2	2.4	,,	0.58	0.54
January	0.7	4.7	,,	0.75	0.70
February	0.8	5.0	,,	0.85	0.88
March	0.9	5.9	,,	0.76	0.71
April	0.6	3.9	,,	0.10	0.10
May	0.6	2.8	,,	0.10	0.09
Total	**61.3**			**3.70**	

12. to 14. Not available

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T.acres)*	*Percentage of principal crops*	*Total area (T.acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane		*Paddy*		*Paddy*	*Green Manure*		
8.0	2.0	20.0	5.0	60.0	12.0	18.0	25.0

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)				*Delta (feet)*				
Perennial	*Kharif*	*Rabi*		*Perennial*	*Kharif*	*Rabi*		*Overall*
Sugarcane	*Paddy*	*Paddy*	*Green manure*	*Sugarcane*	*Paddy*	*Paddy*	*Green manure*	
80	136	60	227	7.6	1.8	4.0	0.4	3.4

17.-18. Not available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

	Range of operation head (feet)	*Maximum supply passing through turbines (cusecs)*	*Power output at 60 percent L.F. kW.*
(i) Kundul Power House	760	113	9,500
(ii) Banjari Power House	730	90	7,500
(iii) Kudantola Power House	130	99	1,500
(iv) Malitoka Power House	150	99	1,650
		5.71 T.M.C.	**20,150**

20. Proposed disposal of tail-race waters

The tail race waters from power house (i) and (ii) are let into the river.

The tail race waters from power house (iii) are reused in power house (iv) and then picked up at Pipalgaon for irrigation

21. Quantum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

The entire area submerged *i.e.* 10,880 acres, by the three reservoirs lies in Madhya Pradesh, mostly forest clad

24.—25. Not available

26. Not applicable

27. Not available

28. Main features and purpose of the scheme

Development of irrigation and power

BAWANTHARI PROJECT

32C.3-G.9-Ma.16/M.34

1. **Name of State** Madhya Pradesh and Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 127,000 acres

3. **Source of supply**

Bawanthari near Sitekasa/Wainganga/Pranhita/**Godavari**
Utilisation upstream :
existing: nil
proposed: considerable

4. **Description of the reservoir or tank**

Live storage	12.0 T.M.C.
Dead storage	1.1 „
Carry-over	Nil
Annual reservoir losses	2.2 T.M.C.
Filling period	15th June to end of October
Depletion period	1st Aug. to 14th June
Catchment area	522 square miles
Area submerged	10,800 acres
Full reservoir level	R.L. 1,130
Minimum pond level	R.L. 1,082

5. **Description of the headworks**

Dam :	earthen, three miles long, 125 feet high
Spillway :	masonry, 2,600 feet long, capacity 160,000 cusecs
Outlets :	head regulators in left and right flanks, capacity 200 cusecs and 800 cusecs respectively

6. **Description of the canals**

Bawanthari Left Bank Canal (contour); 30 miles long; perennial ; unlined; capacity **200 cusecs**

Bawanthari Right Bank Canal (contour); 50 miles long; perennial; unlined; capacity **800 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Present proposal based mainly on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

Item	*Names of districts* *Balaghat (Madhya Pradesh) Left Bank Canal*	*Bhandara (Maharashtra) Right Bank Canal*	*Total*
	........................*thousand acres*	....	
G.C.A.	40.0	155.0	195.0
C.C.A.	28.0	115.0	143.0
Deduct existing tank and well irrigation			16.0
Net C.C.A.			127.0

10. Area proposed to be irrigated annually and intensity of irrigation (both canals)

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	5,600 acres	4.4 percent
Kharif	66,000 ,,	52.0 ,,
Rabi	62,400 ,,	49.1 ,,
Total	**134,000** ,,	**105.5** ,,

11. Normal rainfall and river supply proposed to be diverted (both canals)

Month	*Rainfall* *Normal*	*Maximum*	*Minimum*	*River supply proposed to be diverted*	*Capacity factor*
1	2	3	4	5	6
	.............*inches*	....		.........*T.M.C.*.........	
June	8.8	20.0	2.6	1st Aug. to 14th Oct.	
July	15.0	32.5	5.4	4.57	0.71
August	16.0	23.6	7.0		
September	7.0	16.7	1.9		
October	1.8	11.4	Nil	15th Oct. to 14th Feb.	
November	0.5	4.0	,,	6.06	0.57
December	0.4	1.4	,,		
January	0.6	3.9	,,		
February	0.7	8.0	,,	15 Feb. to 14th June	
March	0.5	4.0	,,	1.34	0.13
April	0.5	8.3	,,		
May	0.5	4.2	,,		
Total	**52.3**			**11.97**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam, silty loam to clayey loam, clayey loam to clay in proportion of 18, 55 and 27 respectively

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Two seasonals*		*Kharif*					*Rabi*					
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*	*Total cropped area (T. acres)*
Others		*Others*		*Paddy*	*Pulses*	*Oil-seed*	*Others*		*Wheat*	*Jowar*	*Pulses*	*Others*		
0.5	0.7	1.7	2.4	38.0	7.0	6.0	3.0	77.3	10.0	20.0	13.0	0.8	62.6	143.0

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Plantains		*Paddy*		*Wheat*	*Gram*		
4.2	5.6	49.3	66.0	16.7	29.8	62.4	134.0

(b) Are there any rules for regulating crop pattern?

No, but sanctions will be regulated so as to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)			*Delta (feet)*			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Plantains	120	70	50	2.0	3.5	4.8	10.3
Paddy	200	400	—	1.2	0.6	—	1.8
Wheat	—	150	—	—	1.6	—	1.6
Gram	—	460	—	—	0.6	—	0.6
Overall delta at canal head							2.1

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

1,500 tanks; irrigating 15,000 acres; area excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

500 wells, irrigating about 2 acres per well; area excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

	Maharastra	Madhya Pradesh	Total
Culturable area (acres)	3,160	1,160	4,320
Forest area (acres)	3,950	1,450	5,400
Waste land (acres)	790	290	1,080
Total (acres)	**7,900**	**2,900**	**10,800**

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

JAM PROJECT

33C.3-G.9-Ma.17

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 14,000 acres

3. **Source of supply**

Jam near Tigaon/Wainganga/**Godavari**

Utilisation upstream:

existing :	nil
proposed:	2,000 acres under minor irrigation schemes

4. **Description of the reservoir or tank (Tentative)**

Live storage	0.40 T.M.C.
Dead storage	0.05 „
Carry-over	Not available
Annual reservoir losses	0.07 T.M.C.
Filling period	June to September
Depletion period	July to February
Catchment area	26.2 square miles
Area submerged	500 acres
Full reservoir level	R.L. 1,730
Minimum pond level	R.L. 1,705

5. **Description of the headworks (Tentative)**

Dam : rolled fill, 3,500 feet long, 55 feet high

Spillway : particulars not available

Outlets: particulars not available

6. **Description of the canal**

Jam Canal (contour); right bank ; 10 miles long; two seasonal; unlined; capacity **46 cusecs**

7. **(a) Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

District	Chhindwara
G.C.A.	20,000 acres
C.C.A.	14,000 ,,

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	5,000 acres	35.7 percent
Rabi	2,000 ,,	14.3 ,,
Total	**7,000 ,,**	**50.0 ,,**

11. **Normal rainfall and river supply proposed to be diverted**

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	......*inches*..........			....*T.M.C.*....	
June	3.7	12.6	0.9	Nil	—
July	9.8	22.6	5.0	0.03	0.24
August	8.8	18.7	2.6	0.04	0.33
September	5.6	15.6	0.3	0.08	0.67
October	2.1	6.1	0.1	0.11	0.89
November	0.7	8.1	Nil	0.02	0.17
December	0.2	1.7	,,	0.06	0.49
January	0.6	4.2	,,	0.05	0.41
February	0.6	5.8	,,	0.08	0.72
March	0.7	3.6	,,	0.05	0.41
April	0.5	3.5	,,	Nil	—
May	0.6	3.4	,,	,,	—
Total	33.9			**0.52**	

12.-13. Not available

14. **Existing pattern of cultivation* in the area proposed to be irrigated**

Perennial			*Kharif*			*Rabi*				*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Sugar-cane	*Others*		*Jowar*	*Others*		*Wheat*	*Gram*	*Others*		
0.6	1.4	0.2	43.4	20.6	6.4	18.9	14.7	0.4	3.4	10.0

**the existing cultivation and crop pattern are based on the statistics of the district as a whole*

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy		*Wheat*	*Paddy*		
71.4	5.0	14.3	14.3	2.0	7.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)				*Delta (feet)*				
Perennial	*Kharif*	*Rabi*		*Perennial*	*Kharif*	*Rabi*		*Overall*
		Wheat	*Paddy*			*Wheat*	*Paddy*	
80	136	207	60	7.6	1.8	0.9	4.0	1.7

17.—18. Not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence within Madhya Pradesh, 90 percent area is culturable

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

SITAKUND PROJECT

34C.3-G.9-Ma.18

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

   Irrigation scheme ; flow-cum-storage ; C.C.A. 5,600 acres

3. **Source of supply**

   A tributary near Bhatawari/Jam/Wainganga/**Godavari**

   Utilisation upstream :

   existing : nil

   proposed : minor schemes envisaging irrigation of 1,000 acres

4. **Description of the reservoir or tank**

Live storage	0.30 T.M.C.
Dead storage	0.02 ,,
Annual reservoir losses	0.06 ,,
Filling period	June to September
Depletion period	July to February
Catchment area	16 square miles
Area submerged	450 acres
Full reservoir level	R.L. 1,700
Minimum pond level	R.L. 1,660

5. **Description of the headworks**

Dam :	earthen, 3,000 feet long, 65 feet high
Spillway :	capacity 5,200 cusecs; other particulars not available
Outlets :	particulars not available

6. **Description of the canal**

   Sitakund Canal (initially contour then on ridge); left bank; 7 miles long ; two seasonal ; unlined ; capacity **33 cusecs**

7. (a) **Nature of investigations carried out up-to-date**	Investigations in progress
(b) **Actual or probable date of beginning of construction**	1962-63
8. **Probable date of beginning of operation**	1964-65

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Chindwara

G.C.A.	7,000 acres
C.C.A.	5,600 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	2,500 acres	44.6 percent
Rabi	1,200 „	21.4 „
Total	**3,700 „**	**66.0 „**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*..................			....*T.M.C.*......	
June	3.7	12.6	0.9	Nil	—
July	9.8	22.6	5.0	0.02	0.23
August	8.8	18.7	2.6	0.03	0.34
September	5.7	15.6	0.3	0.06	0.70
October	2.1	6.1	0.1	0.07	0.80
November	0.7	8.1	Nil	0.01	0.12
December	0.2	1.7	„	0.02	0.23
January	0.6	4.2	„	0.02	0.23
February	0.6	5.8	„	0.02	0.25
March	0.7	3.6	„	Nil	—
April	0.6	3.5	„	„	—
May	0.7	3.4	„	„	—
Total	**34.2**			**0.25**	

12. Not available

13. **(a) Characteristics of soils in the commanded area** No soil surveys carried out

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Kharif*			*Rabi*				*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total aera (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Sugarcane	*Others*		*Jowar*	*Others*		*Wheat*	*Gram*	*Others*		
0.6	1.4	0.1	44.0	20.7	3.3	19.0	14.0	0.3	1.7	5.1

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Wheat*		
67.6	2.5	32.4	1.2	3.7

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Kharif	*Rabi*	*Kharif*	*Rabi*	*Overall*
136	207	1.8	0.9	1.6

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

450 acres (about 70 percent cultivated and rest culturable)

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

29. Special features of the scheme

Under correspondance between the State Government and Planning Commission for inclusion in the III Plan

DOKDOH PROJECT

35C.3-G.9-Ma.19

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**
Irrigation scheme ; flow-cum-storage ; C.C.A. 7,800 acres

3. **Source of supply**
Dokdoh/Kanhan/**Godavari**
Utilisation upstream :
existing : nil
proposed : 2,000 acres under minor irrigation schemes

4. **Description of the reservoir or tank**

Live storage	0.48 T.M.C.
Dead storage	0.03 „
Carry-over	Not available
Annual reservoir losses	0.09 T.M.C.
Filling period	June to September
Depletion period	July to February
Catchment area	30 square miles
Area submerged	700 acres
Full reservoir level	R.L. 1,295
Minimum pond level	R.L. 1,257

5. **Description of the headworks**

Dam :	3,168 feet long, 65 feet high, other particulars not available
Spillway :	capacity 8,087 cusecs, other particulars not available
Outlets :	particulars not available

6. **Description of the canals**
Dokdoh Right Bank Canal (contour) ; 14.3 miles long ; two seasonal ; unlined ; capacity **32 cusecs**
Dokdoh Left Bank Canal (contour) ; 7.7 miles long ; two seasonal ; unlined ; capacity **21 cusecs**

7. (a) **Nature of investigations carried out up-to-date**
Field investigations not yet undertaken, present proposal based on topo-sheet studies
(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Chhindwara

G.C.A.	11,100 acres
C.C.A.	7,800 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	4,000 acres	51.3 percent
Rabi	2,000 „	25.6 „
Total	**6,000 „**	**76.9 „**

11. Normal rainfall and river supply proposed to be diverted (both canals)

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	.... *inches*	....	....	...... *T.M.C.*	
June	3.7	12.6	0.9	Nil	—
July	9.8	22.6	5.0	0.03	0.21
August	8.9	18.7	2.6	0.04	0.28
September	5.7	15.6	0.3	0.10	0.73
October	2.1	6.1	0.1	0.12	0.85
November	0.7	8.1	Nil	0.01	0.07
December	0.2	1.7	„	0.03	0.21
January	0.6	4.2	„	0.03	0.21
February	0.6	5.8	„	0.03	0.23
March	0.7	3.6	„	Nil	—
April	0.5	3.5	„	„	—
May	0.7	3.4	„	„	—
Total	**34.2**			**0.39**	

12.-13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Kharif*			*Rabi*				*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Sugarcane	*Others*		*Jowar*	*Others*		*Wheat*	*Gram*	*Others*		
0.5	1.4	0.1	42.3	20.6	3.4	19·1	14.7	1.4	1.9	5.4

Note:—The existing cultivation and crop pattern are based on the statistics of the district as a whole

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Wheat*		
66.7	4.0	33.3	2.0	6.0

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
80	136	207	7.6	1.8	0.9	1.5

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence within Madhya Pardesh, 75 percent culturable

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

MOHGAON PROJECT

36C.3-G.9-Ma.20

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme ; flow-cum-storage ; C.C.A. 20,000 acres

3. **Source of supply**

Sampna at Mohgaon/Wainganga/**Godavari**

Utilisation upstream :

existing:	nil
proposed:	irrigation of 3,000 acres under minor irrigation schemes

4. **Description of the reservoir or tank**

Live storage	1.53 T.M.C.
Dead storage	0.04 „
Carry-over	Not available
Annual reservoir losses	0.20 T.M.C.
Filling period	June to September
Depletion period	July to May
Catchment area	99 square miles
Area submerged	1,600 acres
Full reservoir level	R.L. 1,300
Minimum pond level	R.L. 1,240

5. **Description of the headworks**

Dam :	earthen, 7,920 feet long, 95 feet high
Spillway :	capacity 34,000 cusecs, other particulars not available
Outlets:	particulars not available

6. **Description of the canals**

Mohgaon Right Bank Canal (contour); 4.2 miles long ; two seasonal ; unlined ; capacity **32 cusecs**

Mohgaon Left Bank Canal (contour); 14.7 miles long; perennial; unlined; capacity **130 cusecs**

7. **(a) Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Chhindwara

	Right Bank Canal	*Left Bank Canal*	*Total*
	....	*thousand acres*	....
G.C.A.	4.6	24.0	28.6
C.C.A.	3.2	16.8	20.0

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated			*Intensity of irrigation*
	Right Bank Canal	*Left Bank Canal*	*Total*	
	....	....	*thousand acres*	....
Perennial	—	0.6	0.6	3.0
Kharif	2.4	9.6	12.0	60.0
Rabi	2.4	9.6	12.0	60.0
Total	**4.8**	**19.8**	**24.6**	**123.0**

11. Normal rainfall and river supply proposed to be diverted (both canals)

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	....	*inches*	....	....*T.M.C.*....	
June	3.7	12.6	0.9	0.02	0.05
July	9.8	22.6	5.0	0.10	0.23
August	8.9	18.7	2.6	0.14	0.32
September	5.7	15.6	0.3	0.30	0.71
October	2.1	6.1	0.1	0.37	0.85
November	0.7	8.1	Nil	0.06	0.14
December	0.2	1.7	,,	0.29	0.67
January	0.6	4.2	,,	0.37	0.85
February	0.6	5.8	,,	0.41	1.05
March	0.7	3.6	,,	0.29	0.67
April	0.5	3.5	,,	0.03	0.07
May	0.7	3.4	,,	0.03	0.07
Total	**34.2**			**2.41**	

12.-13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Kharif*			*Rabi*				*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Sugarcane	*Others*		*Jowar*	*Others*		*Wheat*	*Gram*	*Others*		
0.6	1.5	0.3	43.4	20.2	8.9	18.9	14.7	0.7	4.8	14.0

Note : The existing cultivation and crop pattern are based on the statistics of the district as a whole

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane		*Paddy*		*Wheat*	*Paddy*		
2.4	0.6	48.8	12.0	24.4	24.4	12.0	24.6

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)				*Delta (feet)*				
Perennial	*Kharif*	*Rabi*		*Perennial*	*Kharif*	*Rabi*		*Overall*
		Wheat	*Paddy*			*Wheat*	*Paddy*	
80	136	207	60	7.6	1.8	0.9	4.0	2.2

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence within Madhya Pradesh, 90 percent culturable land

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

PENCH DIVERSION SCHEME

37C.3-G.9-Ma.21

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 309,800 acres

3. **Source of supply**

Pench near Machagora/Kanhan/Wainganga/**Godavari** and Tharka, Nakta and Wainganga rivers

Utilisation upstream :
existing : nil
proposed : minor irrigation schemes, envisaging irrigation of about 20,000 acres

4. **Description of the reservoir or tank (Tentative)**

Live storage	23.00 T.M.C.
Dead storage	19.00 ,,
Carry-over	4.00 ,,
Annual reservoir losses	4.00 ,,
Filling period	June to September
Depletion period	September to June
Catchment area	689 square miles
Area submerged	38,000 acres
Full reservoir level	R.L. 2,070
Minimum pond level	R.L. 2,040

5. **Description of the headworks**

Dam : masonry, over-flow section 100 feet long, and 130 feet high, flanked by rolled earth fill dams 13,000 feet and dykes, 9,500 feet
Spillway : capacity 188,000 cusecs, other particulars not available
Outlets : capacity 2,100 cusecs, other particulars not available

6. **Description of the canal**

Seoni Canal (contour); left bank; 58 miles long (branches 90 miles); perennial : unlined; capacity **2,080 cusecs**

The canal will also receive some supplies by Feeder Canals from the Tharka Nala and Nakta Nala, tributaries of Wainganga, and also from the Wainganga itself. Further particulars not available.

7. (a) **Nature of investigations carried out up-to-date**

Present proposals based on preliminary reconnaissiance and topo-sheet studies only

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

Item	*Names of districts*			*Total*
	Chhindwara	*Seoni*	*Balaghat*	
	....	...*thousand acres*......	....	......
G.C.A.	54.4	331.4	105.5	491.3
C.C.A.	40.8	215.2	53.8	309.8

10. Area proposed to be irrigated annually and intensity of irrigation

	Chhindwara		*Seoni*		*Balaghat*	
	Area proposed to be irrigated (T. acres)	*Intensity of irrigation (percentage)*	*Area proposed to be irrigated (T. acres)*	*Intensity of irrigation (percentage)*	*Area proposed to be irrigated (T. acres)*	*Intensith of irrigation (percentage)*
Perennial	2.9	7.1	16.1	7.5	6.0	11.1
Kharif	19.2	47.0	101.8	47.3	24.2	45.0
Rabi	11.9	29.2	98.6	45.8	27.0	50.2
Total	**34.0**	**83.3**	**216.5**	**100.6**	**57.2**	**106.3**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	....	...*inches*...	....	....*T.M.C*....	
June	8.0	20.7	0.7	0.87	0.16
July	17.4	30.3	4.8	1.26	0.23
August	13.6	28.8	6.8	1.58	0.28
September	7.6	26.2	2.6	3.91	0.73
October	2.7	10.1	Nil	4.85	0.87
November	0.7	9.9	,,	1.07	0.20
December	0.3	2.3	,,	2.98	0.54
January	0.9	4.4	,,	3.73	0.67
February	0.9	4.1	,,	3.95	0.79
March	0.9	3.8	,,	2.92	0.52
April	0.7	3.9	,,	1.31	0.24
May	0.9	6.6	,,	1.31	0.24
Total	**54.6**			**29.74**	

12.—13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

	Perennial			*Kharif*				*Rabi*				*Total cropped area (T. acres)*
	Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
	Sugarcane	*Others*		*Jowar*	*Others*	*Paddy*		*Wheat*	*Gram*	*Others*		
Chhindwara	0.5	1.7	0.7	43.4	20.4	—	21.7	19.0	14.7	0.4	11.6	34.0
Seoni	—	0.5	0.9	5.8	6.9	33.0	82.9	32.7	16.2	4.9	97.7	181.5
Balaghat	0.4	0.5	0.4	76.0	3.9	—	34.5	3.8	—	15.4	8.3	43.2

**The existing cultivation and crop pattern are based on the statistics of the district as a whole, assuming cultivated area 70 percent, 65 percent and 90 percent of culturable area for Chhindwara, Seoni and Balaghat districts respectively*

15. (a) Proposed pattern of irrigated cultivation

Crop period :	Perennial	1st September to 30th June	(303 days)
	Kharif (Paddy)	16th July to 14th November	(122 days)
	Rabi (Paddy)	1st Dec. to 31st Mar.	(121 days)
	Green manure	1st Dec. to 14th Jan.	(45 days)
	Rabi (Wheat)	15th November to 15th February	(93 days)

	Perennial		*Kharif*		*Rabi*				*Grand Total (T. acres)*
	Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
	Sugarcane		*Paddy*		*Wheat*	*Paddy*	*Green manure*		
Chhindwara	8.5	2.9	56.5	19.2	35.0	—	—	11.9	34.0
Seoni	7.4	16.1	47.0	101.8	29.7	10.9	5.0	98.6	216.5
Balaghat	10.5	6.0	42.3	24.2	23.1	21.1	3.0	.27.0	57.2
Total		**25.0**		**145.2**				**137.5**	**307.7**

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)					*Delta (feet)*					
Perennial	*Kharif*	*Rabi*			*Perennial*	*Kharif*	*Rabi*			*Overall*
		Wheat	*Paddy*	*Green manure*			*Wheat*	*Paddy*	*Green manure*	
80	136	207	60	227	7.6	1.8	0.9	4.0	0.4	1.2

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Minor tanks irrigating about 63,000 acres, excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power ; water supply (month-wise), if any, required for these aspects ; financial returns

There is a drop of about 200 feet at mile 52 of the Seoni Canal where it may be possible to generate some power

23. Extent and type of area submerged by reservoir

Entire submergence within Madhya Pradesh, 50 percent of the area is culturable, the rest is under scrub jungle.

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrrigated agriculture

KULBEHRA SCHEME

38C.3-G.9-Ma. 22

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Multipurpose scheme; flow-cum-storage; power, 27,500 kW. installed; irrigation, C.C.A. 6,300 acres

3. **Source of supply**

Kulbehra at Bisapur/Sovna/Kanhan/Wainganga/Pranhita/**Godavari**
Utilisation upstream:
existing :—nil

It may, however, be possible to irrigate 30,000 acres upstream

4. **Description of the reservoir or tank (Tentative)**

Live storage	12.00 T.M.C.
Dead storage	0.60 ,,
Carry-over	Not available
Annual reservoir losses	1.70 T.M.C.
Filling period	June to October
Depletion period	July to June
Catchment area	291 square miles
Area submerged	10,500 acres
Full reservoir level	Not available
Dead storage level	Not available

5. **Description of the headworks**

Dam : 10,000 feet long, 120 feet high; dykes 5,000 feet long
Spillway: particulars not available
Outlets: for Power House No. I, at toe of dam; capacity 320 cusecs
for Power House No. II, Kusumdhana; capacity 320 cusecs
for Power House No. III, Panyari; capacity 340 cusecs

6. **Description of the canal**

Sovna Canal (contour); left bank; 6.7 miles long; perennial; unlined; authorised capacity **75 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken ; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Chhindwara

G.C.A.	8,400 acres
C.C.A.	6,300 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	500 acres	7.9 percent
Kharif	3,500 ,,	55.6 ,,
Rabi	5,000 ,,	79.4 ,,
Total	**9,000** ,,	**142.9** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*............			......*T.M.C.*........	
June	3.7	12.6	0.9	0.02	0.10
July	9.8	22.6	5.0	0.03	0.15
August	8.9	18.7	2.6	0.04	0.20
September	5.7	15.6	0.3	0.09	0.46
October	2.1	6.1	0.1	0.12	0.60
November	0.7	8.1	Nil	0.02	0.10
December	0.2	1.7	,,	0.11	0.55
January	0.6	4.2	,,	0.14	0.70
February	0.6	5.8	,,	0.15	0.83
March	0.7	3.6	,,	0.11	0.55
April	0.5	3.5	,,	0.03	0.15
May	0.7	3.4	,,	0.03	0.15
Total	**34.2**			0.89	

12.-13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Perennial			*Kharif*			*Rabi*				*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Sugarcane	*Others*		*Jowar*	*Others*		*Wheat*	*Gram*	*Others*		
0.5	1.3	0.1	43.4	20.7	2.8	19.0	14.7	0.4	1.5	4.4

**assumed same as that for the district as a whole*

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*				*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Sugarcane		*Paddy*		*Wheat*	*Paddy*	*Green manure*		
5.5	0.5	38.9	3.5	22.2	22.2	11.2	5.0	9.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)					*Delta (feet)*					
Perennial	*Kharif*	*Rabi*			*Perennial*	*Kharif*	*Rabi*			*Overall*
		Wheat	*Paddy*	*Green manure*			*Wheat*	*Paddy*	*Green manure*	
80	136	207	60	227	7.6	1.8	0.9	4.0	0.4	2.3

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

	mean head	*mean supply through turbines*
Power House I (toe of Dam)	30 feet	320 cusecs
Power House II (Kusumdhana)	500 feet	320 cusecs
Power House III (Panayari)	210 feet	340 cusecs

Annual 10.7 T.M.C.

20. Proposed disposal of tail-race waters

About 15 percent of the tail race waters will be diverted for irrigation; rest will flow down the river

21. Quantum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

An area of about 10,500 acres will be submerged; about 75 percent appears to be cultivable; a small length of Nagpur Chhindwara railway line (narrow gauge) may be submerged

24. to 27. Not available

28. Main features and purpose of the scheme General development

UMRA NALLA PROJECT

39C.3-G.9-Ma.23

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 17,000 acres

3. **Source of supply**

Umra Nalla near Kukdi Khapa/Wainganga/**Godavari**

Utilisation upstream :

existing : nil

proposed : irrigation of 1,000 acres under minor works

4. **Description of the reservoir or tank (Tentative)**

Live storage	0.57 T.M.C.
Dead storage	0.04 ,,
Carry-over	Not available
Annual reservoir losses	0.10 T.M.C.
Filling period	July to September
Depletion period	July to June
Catchment area	21.0 square miles
Full reservoir level	R.L. 2,290
Minimum pond level	R.L. 2,250

5. **Description of the headworks (Tentative)**

Dam : earthen, 5,000 feet long, 70 feet high

Spillway : particulars not available

Outlets : two, capacity left bank sluice 56 cusecs, right bank sluice 8 cusecs

6. **Description of the canals (Tentative)**

Umra Nalla Left Bank Canal (contour); 12.5 miles long; perennial; unlined; capacity 56 cusecs

Umra Nalla Right Bank Canal (contour); 5 miles long; perennial; unlined; capacity 8 cusecs

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken, present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Chhindwara

	Left Bank Canal	*Right Bank Canal*	*Total*
	............*thousand acres*	....	....
G.C.A.	21.3	3.0	24.3
C.C.A.	14.9	2.1	17.0

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated			*Intensity of irrigation*
	Left Bank Canal	*Right Bank Canal*	*Total*	
	..................*thousand acres*	....		.....*percentage*......
Perennial	0.2	—	0.2	1.2
Kharif	4.0	0.6	4.6	27.1
Rabi	2.9	0.4	3.3	19.4
Total	**7.1**	**1.0**	**8.1**	**47.7**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	........*inches*	....	....	......*T.M.C*......	
June	5.9	3.5	1.8	0.01	0.06
July	12.8	22.1	5.1	0.05	0.29
August	9.3	23.2	2.0	0.05	0.29
September	6.7	16.6	0.7	0.11	0.66
October	2.2	8.6	Nil	0.15	0.88
November	1.0	7.3	,,	0.02	0.12
December	0.4	3.9	,,	0.06	0.35
January	0.9	4.3	,,	0.07	0.41
February	1.0	5.4	,,	0.06	0.39
March	0.8	2.6	,,	0.05	0.29
April	0.4	2.7	,,	0.01	0.06
May	0.7	4.3	,,	0.01	0.06
Total	**42.1**			**0.65**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Generally red and yellow soils in plains and gravelly with patches of black soil in uplands

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation* in the area proposed to be irrigated

Perennial			*Kharif*			*Rabi*				*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Sugarcane	*Others*		*Paddy*	*Others*		*Wheat*	*Gram*	*Others*		
0.5	1.2	0.2	43.4	20.5	7.6	19.3	14.4	0.7	4.1	11.9

**existing cultivation and crop pattern are based on statistics of the district as a whole*

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane		*Paddy*		*Wheat*	*Paddy*		
2.5	0.2	56.8	4.6	28.4	12.4	3.3	8.1

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)				*Delta (feet)*				
Perennial	*Kharif*	*Rabi*		*Perennial*	*Kharif*	*Rabi*		*Overall*
		Wheat	*Paddy*			*Wheat*	*Paddy*	
80	136	207	60	7.6	1.8	0.9	4.0	2.1

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

The entire submergence within Madhya Pradesh, 90 percent is culturable land

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

INDRAVATI HYDEL PROJECT

40C.3-G.11-Ma.24

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

   Hydro-electric scheme; flow-cum-storage; power 541,000 kW. installed (Chitrakot—58,000 kW; Bodghat—147,000 kW; Kutru—86,000 kW; and (Nugur) Manjimendra 250,000 kW.)

3. **Source of supply**

   Indravati at Chitrakot, Bodghat, Kutru and Nugur/**Godavari**

   Utilisation upstream: considerable

4. **Description of the reservoir or tank**

	Chitrakot	*Bodghat*	*Kutru*	*(Nugur)* *Manjimendra*
Live storage (T.M.C.)	41.00	170.00	200.00	Nil
Dead storage (T.M.C.)	4.10	N.A.	20.00	N.A.
Carry-over	N.A.	N.A.	N.A.	N.A.
Annual reservoir losses (T.M.C.)	6.15	9.00	20.20	1.70
Filling period	June to Oct.	June to Sep.	July to Sep.	June to Sep.
Depletion period	July to June	July to June	July to June	July to June
Catchment area (square miles)	4,568	5,900	8,816	Not available
Area submerged (acres)	35,300	51,000	116,000	9,800
Full reservoir level R.L.	1,770	1,400	1,000	850
Dead storage level R.L.	1,720	1,250	950	Not available

5. **Description of the headworks**

Dam :	length (feet)	5,400	6,600	3,960	2,500
	height (feet)	60	380	175	75
	other particulars not available				
Spillway:	particulars not available				
Outlets:	particulars not available				

6. Not available

7. (a) **Nature of investigations carried out up-to-date**

   Field investigations not yet undertaken; present proposals based on topo-sheet studies

   (b) Not available

8. Not available

9. to 18. Not applicable

POWER ASPECTS

19. River supply proposed to be diverted and operation head

	Gross operation head (feet)	*Mean supply passing through turbines*	
		(cusecs)	*(T.M.C.)*
Chitrakot	350	1,500	47.3
Bodghat	330	4,000	126.1
Kutru	130	6,000	189.2
Manjimendra	350	6,000	189.2

20. Proposed disposal of tail-race waters

The tail-race waters of Chitrakot Power House will be utilised for power generation at Bodhghat, those of Bodhghat Power House for power generation at Kutru and those of Kutru Power House at Manjimendra. The tail-race waters of Manjimendra Power House will be let into the river.

21. Quantum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

The entire submergence lies in Madhya Pradesh, further particulars not available

24.-25.	Not available
26.	Not applicable
27.	Not available
28. Main features and purpose of the scheme	Power generation

BHOOPALA-PATNAM PROJECT 41C.3-G.11-M.45/Ma.25

1. **Name of State**

Madhya Pradesh and Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

Multipurpose scheme; flow-cum-storage ; irrigation, C.C.A. 80,000 acres ; power, 170,000 kW. installed

3. **Source of supply**

Indravati at Desli/**Godavari**
Utilisation upstream :
existing : minor works only
proposed : considerable

4. **Description of the reservoir or tank**

Live storage	100.00 T.M.C.
Dead storage	205.00 ,,
Carry-over	Nil
Annual reservoir losses	42.00 T.M.C.
Filling period	15th June to 14th June
Depletion period	-do-
Catchment area	14,013 square miles
Area submerged	127,000 acres
Full reservoir level	R.L. 500
Minimum pond level	R.L. 470

5. **Description of the headworks**

Dam :	masonry with earthen flanks, 21,000 feet long, 200 feet high
Spillway :	capacity 789,000 cusecs, other particulars not available
Outlet :	head regulator, right flank, capacity 8,500 cusecs, other particulars not available

6. **Description of the canal** Indravati Canal; particulars not available

7. (a) **Nature of investigations carried out up-to-date**

Present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

	Chanda (Maharashtra)	*Bastar (Madhya Pradesh)*	*Total*
	..........*thousand acres*...........		
G.C.A.	60·0	50·0	110·0
C.C.A.	50·0	30·0	80·0

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	64,000 acres	80·0 percent
Rabi	19,200 ,,	24·0 ,,
Hot weather	44,800 ,,	56·0 ,,
Total	**128,000** ,,	**160.0** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*
	Normal	*Maximum*	*Minimum*	
1	2	3	4	5
	............*inches*...........			........*T.M.C.*........
June	6.8	20·4	2.2	From 15th June to 14th October
July	13·5	29.7	7·9	3·87
August	11·4	25.4	5·8	
September	8·2	17.0	2·3	
October	2·1	9·5	Nil	From 15th October to 14th February
November	0·6	4.0	,,	0·64
December	0.3	0.8	,,	
January	0.4	1.9	,,	
February	0.4	4.9	,,	
March	0.6	4.2	,,	From 15th February to 14th June
April	0.6	3.1	,,	5·44
May	1·3	4·1	,,	
Total	**46·2**			**9·95**

12.-13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*			*Kharif*			*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugar-cane	*Others*		*Tobacco*	*Others*		*Paddy*	*Others*		*Jowar*	*Others*		
0·2	0·2	0·1	1·0	1·4	1·2	55·3	16·3	35·8	24·8	1·0	12·9	50·0

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Hot weather*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Gram*		*Groundnut*		
50.0	64.0	15.0	19.2	35.0	44.8	128.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Overall*
170	344	88	1.4	0.7	2.7	1.8

17.(a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

About 91 tanks, irrigating 2,700 acres, included in the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Power House will be at the tail of the Indravati canal

Range of operation head (feet)	*Supply passing through turbines (cusecs)*
Constant head of about 180 feet	Constant discharge of 8,000 cusecs
Total	**252.13 T.M.C.**

20. Proposed disposal of tail-race waters

Tail-race waters will be let into the Godavari near Kotturu about a mile below Inchampalli

21. Quantum of river supplies available in relation to withdrawals

See item 18 above

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Most of the area likely to be submerged is hilly and covered with forest. The submergence will be 96,000 acres in Maharashtra and 31,000 acres in Madhya Pradesh

24. to 27. Not available

28. Main features and purpose of the scheme Power generation

GORIA BAHAR SCHEME

42C.3-G.11-Ma.26

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum storage; C.C.A. 10,000 acres

3. **Source of supply**

Goria Bahar near Bilori/Indravati/**Godavari**
Utilisation upstream :
existing : nil
contemplated: 7,000 acres irrigation under minor schemes.

4. **Description of the reservoir or tank**

Live storage	0.62 T.M.C.
Dead storage	0.04 „
Carry-over	Not available
Annual reservoir losses	0.20 T.M.C.
Filling period	June to September
Depletion period	July to February
Catchment area	45 square miles
Area submerged	1,600 acres
Full reservoir level	R.L. 1,810
Minimum pond level	R.L. 1,795

5. **Description of the headworks (Tentative)**

Dam : 7,000 feet long, 33 feet high; other particulars not available

6. **Description of the canals**

Goria Bahar Right Bank Canal (contour); 18 miles long; perennial; unlined; capacity **78 cusecs**

Goria Bahar Left Bank Canal (contour); 7 miles long; perennial; unlined; capacity **21 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

G.C.A.	14,000 acres
C.C.A.	10,000 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigdted	*Intensity of irrigation*
Perennial	900 acres	9.0 percent
Kharif	7,000 ,,	70.0 ,,
Rabi	2,000 ,,	20.0 ,,
Total	**9,900** ,,	**99.0** ,,

11. Normal rainfall and river supply proposed to be diverted (both canals)

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..............*inches*..............			.........*T.M.C*...........	
June	8.2	14.6	0.5	0.03	0.12
July	14.6	26.6	7.6	0.06	0.23
August	15.7	32.8	7.4	0.08	0.30
September	9.6	21.4	Nil	0.18	0.70
October	4.3	14.7	,,	0.23	0.87
November	1.0	4.4	,,	0.05	0.19
December	0.2	1.6	,,	0.04	0.15
January	0.4	3.3	,,	0.06	0.23
February	0.7	8.0	,,	0.05	0.21
March	0.8	3.1	,,	0.05	0.19
April	1.9	5.0	,,	0.05	0.19
May	2.3	5.1	,,	0.05	0.19
Total	**59.7**			**0.93**	

12.-13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Kharif			*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy	*Others*		*Wheat*	*Others*		
79.9	7.6	7.0	7.6	4.9	1.0	8.0

**Cultivation and crop pattern based on statistics for the dtstrict as a whole*

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane		*Paddy*		*Wheat*		
9.1	0.9	70.7	7.0	20.2	2.0	9.9

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
80	136	207	7.6	1.8	0.9	2.2

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects ; financial returns

Nil

23. Extent and type of area submerged by reservoir

Forest and waste land 320 acres, culturable 1,280 acres, all in Madhya Pradesh

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

MOTKOT PROJECT

43C.3-G.11-Ma.27

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme ; flow-cum-storage ; C.C.A. 21,000 acres

3. **Source of supply**

Koher Bahar at Motkot/Indravati/**Godavari**
Utilisation upstream:
existing : nil
proposed : nil

4. **Description of the reservoir or tank**

Live storage	1.00 T.M.C.
Dead storage	0.08 ,,
Carry-over	Not available
Annual reservoir losses	0.25 T.M.C.
Filling period	July to September
Depletion period	July to June
Catchment area	26 square miles
Area submerged	1,600 acres
Full reservoir level	R.L. 1,995
Minimum pond level	R.L. 1,950

5. Not available

6. **Description of the canals**

Two perennial canals, one on each bank; other particulars not available

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken, present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar	
G.C.A.	30,000 acres
C.C.A.	21,000 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	1,000 acres	4.8 percent
Kharif	10,000 „	47.6 „
Rabi	6,000 „	28.6 „
Total	**17,000** „	**81.0** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	inches			*T.M.C.*	
June	8.2	14.6	0.5	0.04	Not available
July	14.7	26.6	7.7	0.09	
August	15.7	32.8	7.4	0.11	
September	9.6	21.4	Nil	0.15	
October	4.3	14.7	„	0.32	
November	1.1	4.4	„	0.06	
December	0.1	1.6	„	0.12	
January	0.4	3.3	„	0.16	
February	0.7	8.0	„	0.16	
March	0.8	3.1	„	0.14	
April	1.9	5.0	„	0.05	
May	2.3	5.1	„	0.05	
Total	**59.8**			**1.45**	

12.-13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Kharif			*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy	*Others*		*Wheat*	*Others*		
79.3	7.4	10.4	8.1	5.2	1.6	12.0

**Based on the statistics of the district as a whole*

15.(a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*				*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Sugarcane & Others		*Paddy*		*Wheat*	*Paddy*	*Green manure*		
5.9	1.0	58.8	10.0	14.1	14.1	7.1	6.0	17.0

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)					*Delta (feet)*					
Perennial	*Kharif*	*Rabi*			*Perennial*	*Kharif*	*Rabi*			*Overall*
Sugarcane	*Paddy*	*Wheat*	*Paddy*	*Green manure*	*Sugarcane*	*Paddy*	*Wheat*	*Paddy*	*Green manure*	
80	136	207	60	227	7.6	1.8	0.9	4.0	0.4	2.0

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

JARANDI NALA PROJECT

44C.3-G.11-Ma.28

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**
   Irrigation scheme; flow-cum-storage; C.C.A. 10,500 acres

3. **Source of supply**
   Jarandi Nala/(Narangi) Indravati/**Godavari**

   Utilisation upstream :

   existing :- minor schemes only

   proposed : Dasupur-Mohan Project and minor schemes

4. **Description of the reservoir or tank**

Live storage	0.80 T.M.C.
Dead storage	0.15 „
Carry-over	Not available
Annual reservoir losses	0.10 T.M.C.
Filling period	June to September
Depletion period	Feb. to June
Catchment area	20 square miles
Area submerged	700 acres
Full reservoir level	R.L. 2,088
Minimum pond level	R.L. 2,060

5. **Description of the headworks**

Dam :	4,550 feet long, 50 feet high; other particulars not available
Spillway:	particulars not available
Outlets :	particulars not available

6. **Description of the canals**
   Jarandi Right Bank Canal (contour); 14 miles long; perennial; unlined; capacity **52 cusecs**

   Jarandi Left Bank Canal (contour); 10 miles long; perennial; unlined; capacity **58 cusecs**

7. (a) **Nature of investigations carried out up-to-date**
   Present proposals based on topo-sheet studies

   (b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

	Right Bank Canal	Left Bank Canal	Total
	................thousand acres...................		
G.C.A.	7.0	8.0	15.0
C.C.A.	4.9	5.6	10.5

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated		*Intensity of irrigation*	
	Right Bank Canal	*Left Bank Canal*	*Right Bank Canal*	*Left Bank Canal*
	......*thousand acres*....		............*percentage*..............	
Perennial	0.4	0.5	8.2	8.9
Kharif	3.6	4.0	73.5	71.4
Rabi	1.7	2.3	34.7	41.1
Total	**5.7**	**6.8**	**116.4**	**121.4**

11. Normal rainfall and river supply proposed to be diverted (both canals)

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	........*inches*.............			......*T.M.C.*.......	
June	8.8	18.6	4.2	0.03	0.11
July	15.6	24.9	6.5	0.07	0.24
August	16.6	24.8	5.8	0.08	0.27
September	11.4	26.5	2.6	0.20	0.70
October	3.5	13.2	0.1	0.24	0.81
November	0.7	4.4	Nil	0.04	0.14
December	0.1	1.3	,,	0.15	0.51
January	0.2	1.0	,,	0.19	0.64
February	0.4	1.8	,,	0.21	0.79
March	0.8	4.1	,,	0.18	0.61
April	1.8	7.5	,,	0.05	0.18
May	1.8	6.3	0.2	0.05	0.17
Total	**61.7**			**1.49**	

12.-13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Kharif			*Rabi*		*Total cropped area (Tacres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy	*Others*		*Others*		
67.0	13.0	4.0	20.0	1.0	5.0

**based on the statistics of the district as a whole*

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*				*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Sugarcane		*Paddy*		*Wheat*	*Paddy*	*Green manure*		
7.2	0.9	60.8	7.6	16.0	12.0	4.0	4.0	12.5

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)					*Delta (feet)*					
Perennial	*Kharif*	*Rabi*			*Perennial*	*Kharif*	*Rabi*			
Sugarcane	*Paddy*	*Wheat*	*Paddy*	*Green manure*	*Sugarcane*	*Paddy*	*Wheat*	*Paddy*	*Green manure*	*Over-all*
80	136	207	60	227	7.6	1.8	0.9	4.0	0.4	2.7

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects ; financial returns

Nil

23. Extent and type of area submerged by reservoir

Submergence in both Madhya Pradesh and Orissa; further particulars not available

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

MARKANDI PROJECT

45C.3-G.11-Ma.29

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme ; flow-cum-storage ; C.C.A. 37,600 acres

3. **Source of supply**

Markandi near Neora/Indravati/**Godavari**

Utilisation upstream: minor schemes only

4. **Description of the reservoir or tank (Tentative)**

Live storage	2.00 T.M.C.
Dead storage	Not available
Carry-over	,,
Annual reservoir losses	0.84 T.M.C.
Filling period	June to September
Depletion period	July to June
Catchment area	55 square miles
Area submerged	5,400 acres
Full reservoir level	R.L. 1,990
Minimum pond level	R.L. 1,965

5. **Description of the headworks**

Dam:	85 feet high, other particulars not available
Spillway:	particulars not available
Outlets:	particulars not available

6. **Description of the canal**

Markandi Canal (contour) ; left bank; 33 miles long ; perennial; unlined; capacity **316 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

District Bastar

G.C.A.	53,700 acres
C.C.A.	37,600 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	2,000 acres	5.3 percent
Kharif	22,500 ,,	59.8 ,,
Rabi	12,500 ,,	33.3 ,,
Total	**37,000** ,,	**98.4** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	...........*inches*...........			.........*T.M.C.*.........	
June	8.8	18.6	4.2	0.03	0.04
July	15.6	24.9	6.5	0.20	0.24
August	16.6	24.8	8.8	0.25	0.30
September	11.4	26.5	2.6	0.57	0.70
October	3.5	13.2	0.1	0.72	0.85
November	0.7	4.4	Nil	0.13	0.16
December	0.1	1.3	,,	0.34	0.40
January	0.2	1.0	,,	0.41	0.48
February	0.4	1.8	,,	0.45	0.59
March	0.8	4.1	,,	0.37	0.44
April	1.8	7.5	0.4	0.10	0.12
May	1.7	6.3	0.2	0.10	0.12
Total	**61.6**			**3.67**	

12.-13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Kharif			*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy	*Others*		*Pulses*	*Others*		
79.3	7.6	22.6	8.0	5.1	3.4	26.0

**Cultivation and crop pattern are based on the statistics for the district as a whole*

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*				*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Sugarcane		*Paddy*		*Wheat*	*Paddy*	*Green manure*		
5.4	2.0	60.8	22.5	15.0	16.2	2.6	12.5	37.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)					*Delta (feet)*					*Overall*
Perennial	*Kharif*	*Rabi*			*Perennial*	*Kharif*	*Rabi*			
Sugarcane	*Paddy*	*Wheat*	*Paddy*	*Green manure*	*Sugarcane*	*Paddy*	*Wheat*	*Paddy*	*Green manure*	
80	136	207	60	227	7.6	1.8	0.9	4.0	0.4	2.3

17. (a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

4 tanks

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

3,554 acres in Orissa and 1,846 acres in Madhya Pradesh; about 90 percent of this area is forest clad and the remaining culturable; four villages in Orissa and two in Madhya Pradesh will be submerged.

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

TIRKA NALLA PROJECT

46C.3-G.11-Ma.30

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme ; flow-cum-storage ; C.C.A. 15,000 acres

3. **Source of supply**

Tirka Nalla near Amabera/Indravati/**Godavari**

Utilisation upstream :

existing : nil

proposed : minor schemes envisage irrigation of about 2,000 acres

4. **Description of the reservoir or tank (Tentative)**

Live storage	1.30 T.M.C.
Dead storage	0.09 ,,
Carry-over	Not available
Annual reservoir losses	0.25 T.M.C.
Filling period	June to September
Depletion period	July to June
Catchment area	25.0 square miles
Area submerged	1,920 acres
Full reservoir level	R.L. 2,110
Minimum pond level	R.L. 2,080

5. **Description of the headworks**

Dam:	earthen, 5,280 feet long, 55 feet high
Spillway:	capacity 8,000 cusecs; other particulars not available
Outlets:	particulars not available

6. **Description of the canals**

Tirka Right Bank Canal (contour) ; 18.4 miles long ; two seasonal ; unlined ; capacity **96 cusecs**

Tirka Left Bank Canal (contour) ; 12.4 miles long ; two seasonal; unlined; capacity **65 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

	Right Bank Canal	*Left Bank Canal*	*Total*
		thousand acres	
G.C.A.	12.0	8.0	20.0
C.C.A.	9.0	6.0	15.0

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated			*Intensity of irrigation*
	Right Bank Canal	*Left Bank Canal*	*Total*	
	thousand acres			*percentage*
Perennial	0.6	—	0.6	4.0
Kharif	7.0	5.0	12.0	80.0
Rabi	3.4	2.0	5.4	36.0
Total	**11.0**	**7.0**	**18.0**	**120.0**

11. Normal rainfall and river supply proposed to be diverted (both canals)

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	inches			*T.M.C.*	
June	8.3	19.1	2.5	0.02	0.05
July	21.5	37.7	7.4	0.10	0.23
August	21.0	33.8	7.7	0.13	0.30
September	11.6	21.5	1.0	0.30	0.72
October	3.4	13.0	0.1	0.38	0.88
November	0.3	2.1	Nil	0.06	0.14
December	0.1	0.8	,,	0.15	0.35
January	0.2	1.7	,,	0.18	0.42
February	0.5	2.0	,,	0.21	0.54
March	0.8	4.4	,,	0.16	0.37
April	1.3	4.3	,,	0.03	0.07
May	1.0	5.2	,,	0.03	0.07
Total	**70.0**			**1.75**	

12.-13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Kharif			*Rabi*		
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Total cropped area (T. acres)*
Paddy	*Others*		*Others*		
90.0	7.1	6.8	2.9	0.2	7.0

**based on the statistics of the district as a whole*

15.(a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*			
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Grand Total (T. acres)*
Sugarcane		*Others*		*Wheat*	*Paddy*		
3.3	0.6	66.7	12.0	13.3	16.7	5.4	18.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)				*Delta (feet)*				
Perennial	*Kharif*	*Rabi*		*Perennial*	*Kharif*	*Rabi*		*Overall*
		Wheat	*Paddy*			*Wheat*	*Paddy*	
80	136	207	60	7.6	1.8	0.9	4.0	2.2

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence of 1,920 acres, within Madhya Pradesh about 80 percent is cultivable

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

BORODA-WALER AND UPPER NIBRA SCHEME 47C.3-G.11-Ma.31

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

   Multipurpose scheme; flow-cum-storage; irrigation, C. C. A. 14,000 acres; power, 53,000 kW. installed

3. **Source of supply**

   Boroda at Markokoda/Indravati/**Godavari**
   Waler at Aturbera/Indravati/**Godavari**
   Nibra at Narainpur/Indravati/**Godavari**
   Tributary of Nibra at Koda/Nibra/Indravati/**Godavari**
   Utilisation upstream:
   existing : nil
   It may be possible to irrigate an area of 60,000 acres upstream

4. **Description of the reservoir or tank**

	Boroda	*Waler*	*Nibra*	*Koda*
Live storage (T.M.C.)	23.0	8.0	5.4	1.0
Dead storage (T.M.C.)	2.3	0.8	0.54	0.1
Carry-over (T.M.C.)	..............Not available..............			
Annual reservoir losses (T.M.C.)	3.3	1.2	0.7	0.2
Filling period	..........June to Oct..............			
Depletion period	..........June to May............			
Catchment area (square miles)	331	108	107	27
Area submerged (acres)	19,200	6,400	3,840	1,240
Full reservoir level R.L.	1,950	1,920	1,860	1,740
Dead storage level R.L.	1,900	1,850	1,780	1,740

5. **Description of the headworks**

	Boroda	*Waler*	*Nibra*	*Koda*
Dam:	4,000 feet long, 160 feet high, other particulars not available	7,500 feet long, 130 feet high, other particulars not available	4,000 feet long, 100 feet high, other particulars not available	8,000 feet long, 80 feet high, other particulars not available

Spillway: particulars not available
Outlets : particulars not available

6. **Description of the canals**

Capacity **200** cusecs; other particulars not available

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken, present proposals based on on topo-sheet studies

(b) Not available

8. Not available

9. **Gross commanded area and culturable commanded area, district-wise**

District Bastar

G.C.A.	20,000 acres
C.C.A.	14,000 ,,

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	2,000 acres	14.3 percent
Kharif (paddy)	12,000 ,,	85.7 ,,
Rabi (wheat)	2,000 ,,	14.3 ,,
Rabi (paddy)	6,000 ,,	42.8 ,,
Total	**22,000** ,,	**157.1** ,,

11. **Normal rainfall and river supply proposed to be diverted**

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity fatctor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*............			......*T.M.C.*......	
June	7.7	14.7	Nil	0.07	0.14
July	17.2	25.1	6.4	0.10	0.19
August	17.2	29.3	9.4	0.13	0.24
September	10.7	18.1	3.7	0.32	0.62
October	3.3	11.4	Nil	0.40	0.75
November	0.2	1.5	,,	0.09	0.17
December	0.1	1.1	,,	0.27	0.50
January	0.2	2.0	,,	0.36	0.67
February	0.5	3.3	,,	0.41	0.85
March	1.4	7.5	,,	0.37	0.69
April	1.6	6.7	,,	0.10	0.19
May	1.5	4.1	,,	0.10	0.19
Total	**61.6**			**2.72**	

12. to 14. Not available

15.(a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*			
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Grand Total (T. acres)*
Sugarcane		*Paddy*		*Wheat*	*Paddy*		
9.1	2.0	54.5	12.0	9.1	27.3	8.0	22.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head

Duty (acres per mean cusec)				*Delta (feet)*				
Perennial	*Kharif*	*Rabi*		*Perennial*	*Kharif*	*Rabi*		*Over-all*
Sugarcane	*Paddy*	*Wheat*	*Paddy*	*Sugarcane*	*Paddy*	*Wheat*	*Paddy*	
80	136	207	60	7.6	1.8	0.9	4.0	2.8

POWER ASPECTS

17.—18. Not available

19. River supply proposed to be diverted and operation head

The storages on the Boroda and the Waler are interconnected and are diverted for power generation at Hurtel.

The tail-race waters of Hurtel are re-used to develop power at Somelpur.

The storages on the Nibra and its tributary are interconnected and are diverted for power generation at Koder.

	Gross operation head (feet)			*Maximum supply passing through turbines (cusecs)*		
	Hurtel	*Somelpur*	*Koder*	*Hurtel*	*Somelpur*	*Koder*
	565	220	730	480	450	120
					Total 19 T. M. C. annually	
Power out put at 60 percent L.F.				32,000 kW.	11,000 kW.	10,000 kW.

20. Proposed disposal of tail-race waters

The tail-race waters will be used for irrigation, the C. C. A. will have to be reclaimed for cultivation

antum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power; water supply (month wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence lies in Madhya Pradesh, mostly forest area

24. to 27. Not available

28. Main features and purpose of the scheme

Irrigation and power development

GUDRA HYDEL PROJECT

48C.3-G.11-Ma 32

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Hydro-electric project; flow-cum-storage; power, 10,000 kW. installed

3. **Source of supply**

Gudra/ Indravati/ **Godavari**

Utilisation upsteam: minor works

4. **Description of the reservoir or tank**

Live storage	28.0 T.M.C.
Dead storage	1.5 ,,
Annual reservoir losses	1.6 ,,
Filling period	July to September
Depletion period	July to June
Catchment area	626 square miles
Area submerged	9,800 acres
Full reservoir level	R. L. 1,650
Dead storage level	R. L. 1,590

5. **Description of the headworks**

Dam : 1,400 feet long, 100 feet high; other particulars not available

Spillway : particulars not available

Outlets : particulars not available

6. Not available

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

9. to 18. Not applicable

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Range of operation head (feet)	*Supply passing through turbines (cusecs)*
Gross operation head 225 feet	400 cusecs
Power out-put 10,000 kW. at 60% load factor	Annual **12.6** T. M. C.

20. Proposed disposal of tail-race waters

The tail-race waters will be let into the river

21. Quantum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence in Madhya Pradesh, mostly hilly and forest lands

24.-25. Not available

26. Not applicable

27. Not available

28. Main features and purpose of the scheme Power generation

DANTEWARA SCHEME

49C.3-G.11-Ma.33

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

   Irrigation scheme; based on flow; C.C.A. 9,000 acres

3. **Source of supply**

   Sankani Nadi near Dantewara/Indravati/**Godavari**
   Utilisation upstream :
   existing : nil
   proposed: irrigation of 10,000 acres under minor schemes

4. **Description of the reservoir or tank**

   Catchment area 200 square miles
   Maximum pond level R. L. 1,205

5. **Description of the headworks (Tentative)**

Weir:	600 feet long; other particulars not available
Spillway:	particulars not available
Outlets:	particulars not available

6. **Description of the canal (Tentative)**

   Dantewara Canal (contour); left bank; 16 miles long; two seasonal; unlined; authorised capacity **105 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

   Field investigations not yet undertaken, present proposals based on topo-sheet studies

   (b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

District	Bastar
G.C.A.	14,000 acres
C.C.A.	9,000 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif (Paddy)	8,000 acres	88.9 percent
Rabi (Wheat)	1,000 „	11.1 „
Rabi (Paddy)	3,000 „	33.3 „
Grean manure	1,000 „	11.1 „
Total	**13,000** „	**144.4** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..............*inches*...........			......*T.M.C*..........	
June	8.0	13.0	3.3	Nil	—
July	18.2	28.5	6.1	0.07	0.25
August	16.8	29.3	8.1	0.08	0.28
September	9.0	20.5	3.2	0.19	0.70
October	3.9	10.2	0.7	0.24	0.85
November	1.2	8.4	0.2	0.03	0.11
December	0.1	1.0	0.1	0.13	0.46
January	0.2	1.6	Nil	0.15	0.53
February	0.2	1.6	„	0.17	0.67
March	0.8	3.8	0.1	0.13	0.46
April	1.5	4.1	0.1	Nil	—
May	1.9	6.0	0.2	„	—
Total	**61.8**			**1.19**	

12.-13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif			*Rabi*		*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy	*Others*		*Others*		
90.2	7.5	5.9	2.3	0.1	6.0

**based on the statistics of the district as a whole*

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*				*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T.acres)*	
Paddy		*Wheat*	*Paddy*	*Green manure*		
61.5	8.0	7.7	23.1	7.7	5.0	13.0

(b) Are there any rules for regulating crop-pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)				*Delta (feet)*				
Kharif	*Rabi*			*Kharif*	*Rabi*			*Overall*
Paddy	*Wheat*	*Paddy*	*Green manure*	*Paddy*	*Wheat*	*Paddy*	*Green manure*	
136	207	60	227	1.8	0.9	4.0	0.4	2.1

17.(a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture; reclamation of land

GODRI NADI PROJECT

50C.3-G.11-Ma.34

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme ; flow-cum-storage ; C.C.A. 7,000 acres

3. **Source of supply**

Godri/Dantewara/Indravati/**Godavari**
Utilisation upstream:
existing : nil
proposed : irrigation of 500 acres under minor schemes

4. **Description of the reservoir or tank**

Live storage	0.49 T.M.C.
Dead storage	0.02 ,,
Carry-over	Not available
Annual reservoir losses	0.06 T.M.C.
Filling period	June to September
Depletion period	June to February
Catchment area	15 square miles
Area submerged	450 acres
Full reservoir level	R.L. 1,410
Minimum pond level	R.L. 1,350

5. **Description of the headworks**

Dam :	earthen, 1,960 feet long, 95 feet high
Spillway .	particulars not available
Outlets :	particulars not available

6. **Description of the canals**

Godri Canal (contour): left bank; 10 miles long; two seasonal; authorised capacity **80 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken, present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

G.C.A.	10,000 acres
C.C.A.	7,000 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	6,000 acres	85.7 percent
Rabi	3,000 ,,	42.9 ,,
Total	**9,000** ,,	**128.6** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*..........			...............*T.M.C.*..........	
June	8.0	12.0	4.8	0.05	0.24
July	18.2	28.5	6.1	0.06	0.28
August	16.8	29.3	8.1	0.14	0.65
September	9.0	20.5	3.2	0.13	0.63
October	3.9	10.2	0.2	0.03	0.14
November	1.2	5.0	Nil	0.02	0.10
December	0.1	1.0	,,	0.09	0.42
January	0.2	1.6	,,	0.11	0.51
February	0.2	1.6	,,	0.10	0.52
March	0.8	3.8	,,	0.09	0.42
April	1.5	4.1	,,	Nil	—
May	1.9	6.0	,,	,,	—
Total	**61.8**			**0.82**	

12.-13. Not available

14. Existing pattern of cultivation *in the area proposed to be irrigated

Kharif			*Rabi*		*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy	*Others*		*Others*		
70.0	10.0	4.0	20.0	1.0	5.0

**based on the statistics of the district as a whole*

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy		*Wheat*	*Paddy*		
66.7	6.0	11.1	22.2	3.0	9.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Kharif	*Rabi*		*Kharif*	*Rabi*		*Overall*
Paddy	*Wheat*	*Paddy*	*Paddy*	*Wheat*	*Paddy*	
136	207	60	1.8	0.9	4.0	2.1

17. (a) Not available

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects ; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence in Madhya Pradesh, more than 50 percent of the area is culturable

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

BHANPUR PROJECT

51C.3-G.11-Ma.35

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 12,600 acres

3. **Source of supply**

Nala near Bhanpur/Sapgonda nadi/Indravati/**Godavari**

Utilisation upstream:

existing : nil

proposed : irrigation of 500 acres

4. **Description of the reservoir or tank**

Live storage	0.77 T.M.C.
Dead storage	0.07 ,,
Carry-over	Nil
Annual reservoir losses	0.11 T.M.C.
Filling period	June to September
Depletion period	June to May
Catchment area	14.6 square miles
Area submerged	832 acres
Full reservoir level	R.L. 1,400
Minimum pond level	R.L. 1,350

5. **Description of the headworks**

Dam :	earthen, 3,700 feet long, 95 feet high
Spillway :	particulars not available
Outlet :	particulars not available

6. **Description of the canal**

Bhanpur Canal (contour); left bank; 11.6 miles long; perennial; unlined; authorised capacity **130 cusecs**

7. **(a) Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

G.C.A.	17,000 acres
C.C.A.	12,600 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	100 acres	0.8 percent
Kharif	10,000 ,,	79.4 ,,
Rabi	2,000 ,,	15.9 ,,
Total	**12,100** ,,	**96.1** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	.............*inches*.............			..........*T.M.C.*........	
June	8.0	12.0	4.8	Nil	—
July	18.2	28.5	6.1	0.09	0.26
August	16.8	29.3	8.1	0.11	0.32
September	9.0	20.5	3.2	0.24	0.71
October	3.9	10.2	0.2	0.30	0.86
November	1.2	5.0	Nil	0.04	0.12
December	0.1	1.0	,,	0.03	0.09
January	0.2	1.6	,,	0.03	0.09
February	0.2	1.6	,,	0.03	0.10
March	0.8	3.8	,,	0.01	0.03
April	1.5	4.1	,,	0.01	0.03
May	1.9	6.0	,,	0.01	0.03
Total	**61.8**			**0.90**	

12.-13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Kharif			*Rabi*		
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Total cropped area (T. acres)*
Paddy	*Others*		*Others*		
69.2	10.1	4.6	20.7	1.2	5.8

**based on the statistics of the district as a whole*

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*		
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Grand Total (T. acres)*
Sugarcane		*Paddy*		*Wheat*		
0.9	0.1	82.6	10.0	16.5	2.0	12.1

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
80	136	207	7.8	1.8	0.9	1.7

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence in Madhya Pradesh; 50 percent is culturable land

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversions of rain-fed cultivation to irrigated agriculture

MARI NADI PROJECT

52C.3-G.11-Ma.36

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum storage; C.C.A. 6,300 acres

3. **Source of supply**

Mari Nadi near Kondapal/Indravati/**Godavari**
No existing or proposed utilisation upstream

4. **Description of the reservoir or tank**

Live storage	..	0.30 T.M.C.
Dead storage	..	0.04 ,,
Carry-over	..	Nil
Annual reservoir losses	..	0.05 T.M.C.
Filling period	..	June to September
Depletion period	..	July to February
Catchment area	..	30.3 square miles
Area submerged	..	384 acres
Full reservoir level	..	R. L. 1,300
Minimum pond level	..	R. L. 1,250

5. **Description of the headworks**

Dam : earthen, 2,200 feet long, 70 feet high
Spillway : capacity 18,000 cusecs, other particulars not available
Outlets : particulars not available

6. **Description of the canals**

Mari Right Bank Canal (contour); 5 miles long; two seasonal; unlined; capacity **8 cusecs**
Mari Left Bank Canal (contour); 14 miles long; two seasonal; unlined; capacity **54 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar	
G.C.A.	9,000 acres
C.C.A.	6,300 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	4,600 acres	73.0 percent
Rabi	2,500 „	39.7 „
Total	**7,100** „	**112.7** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	....	*inches*	....	......*T.M.C.*......	
June	8.0	12.0	4.8	Nil	—
July	18.2	28.5	6.1	0.04	0.24
August	16.7	29.3	8.1	0.06	0.36
September	9.0	20.5	3.2	0.11	0.68
October	4.0	10.2	0.2	0.14	0.84
November	1.2	5.0	Nil	0.02	0.19
December	0.1	1.0	„	0.08	0.48
January	0.2	1.6	„	0.10	0.60
February	0.2	1.6	„	0.11	0.73
March	0.8	3.8	„	0.09	0.54
April	1.5	4.1	„	Nil	—
May	1.9	6.0	„	„	—
Total	**61.8**			**0.75**	

12.-13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif			*Rabi*		*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy	*Others*		*Others*		
70.7	10.9	3.1	18.4	0.7	3.8

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*			
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Grand Total (T. acres)*
Paddy		*Wheat*	*Paddy*		
64.8	4.6	7.0	28.2	2.5	7.1

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Kharif	*Rabi*		*Kharif*	*Rabi*		*Overall*
Paddy	*Wheat*	*Paddy*	*Paddy*	*Wheat*	*Paddy*	
136	207	60	1.8	0.9	4.0	2.4

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence within Madhya Pradesh, (60 percent area culturable, the rest waste land)

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

BERUDI SCHEME 53C.3-G.11-Ma.37

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Multipurpose scheme ; flow-cum-storage; irrigation, C.C.A. 6,500 acres ; power, 15,000 kW. installed

3. **Source of supply**

Berudi near Eramnar/Indravati/**Godavari**

No existing utilisation upstream;

proposed, irrigation of 40,000 acres by minor schemes

4. **Description of the reservoir or tank**

Live storage	28.0 T.M.C.
Dead storage	2.80 ,,
Carry-over	Nil
Annual reservoir losses	4.35 T.M.C.
Filling period	June to August
Depletion period	July to June
Catchment area	349 square miles
Area submerged	27,500 acres
Full reservoir level	R.L. 1,035
Dead storage level	R.L. 1,000

5. **Description of the headworks**

Dam :	3,000 feet long, 85 feet high, other particulars not available
Spillway :	particulars not available
Outlets :	particulars not available

6. **Description of the canals**

Power channel; 9 miles long

Irrigation canal; authorised capacity **107 cusecs**; other particulars not available

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; **present proposals based on topo-sheet studies**

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

G.C.A.	9,000 acres
C.C.A.	6,500 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	1,500 acres	23.1 percent
Kharif (paddy)	5,000 „	76.9 „
Rabi (wheat)	1,000 „	15.4 „
„ (paddy)	2,500 „	38.5 „
Total	**10,000 „**	**153.9 „**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	.... *inches*			.... *T.M.C.*	
June	7.8	15.0	2.5	0.05	0.18
July	22.0	37.0	7.2	0.04	0.14
August	18.9	38.4	5.6	0.05	0.17
September	10.6	20.0	3.6	0.15	0.54
October	3.3	9.6	0.2	0.18	0.63
November	0.6	1.8	Nil	0.05	0.18
December	0.1	0.1	„	0.13	0.45
January	0.1	2.2	„	0.20	0.70
February	0.4	2.8	„	0.22	0.85
March	1.1	5.6	„	0.19	0.66
April	1.0	2.5	„	0.05	0.18
May	1.2	4.2	„	0.05	0.17
Total	**67.1**			**1.36**	

12. to 14. Not available

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane		*Paddy*		*Wheat*	*Paddy*		
15.0	1.5	50.0	5.0	10.0	25.0	3.5	10.0

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)				*Delta (feet)*				
Perennial	*Kharif*	*Rabi*		*Perennial*	*Kharif*	*Rabi*		*Overall*
Sugarcane	*Paddy*	*Wheat*	*Paddy*	*Sugarcane*	*Paddy*	*Wheat*	*Paddy*	
80	136	207	60	7.6	1.8	0.9	4.0	3.1

17. - 18. Not available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Range of operation head (feet)	*Supply passing through turbines (cusecs)*
Gross operation head 300 feet	450 cusecs
Power output at 60 percent load factor 15,000 kW.	
Total	**14.2 T.M.C.** annually

20. Proposed disposal of tail-race waters

The tail-race waters will be partly diverted for irrigation

21. Quantum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence in Madhya Pradesh; mostly forest and hilly land

24. to 27. Not available

28. Main features and purpose of the scheme

Irrigation and power development

TONDA NADI SCHEME

54C.3-G.11-Ma.38

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme ; flow-cum-storage; C.C.A. 5,400 acres

3. **Source of supply**

Tonda Nadi near Gangalur/Indravati/Godavari

Utilisation upstream : nil

4. **Description of the reservoir or tank (Tentative)**

Live storage	0.35 T.M.C.
Dead storage	0.02 ,,
Carry-over	Nil
Annual reservoir losses	0.04 T.M.C.
Filling period	July to September
Depletion period	July to February
Catchment area	9 square miles
Area submerged	260 acres
Full reservoir level	R.L. 1,209
Minimum pond level	R.L. 1,173

5. **Description of the headworks**

Dam : 2,000 feet long, 57 feet high, other particulars not available

Spillway : particulars not available

Outlets : particulars not available

6. **Description of the canal**

Tonda Nadi Canal (contour) ; left bank; 9 miles long; two seasonal; unlined; capacity 54 cusecs

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

G.C.A.	7,000 acres
C.C.A.	5,400 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	4,000 acres	74.1 percent
Rabi	1,000 ,,	18.5 ,,
Total	**5,000 ,,**	**92.6 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	inches	*inches*	*inches*	*T.M.C.*	
June	7.8	14.0	2.5	Nil	—
July	22.0	37.0	7.2	0.04	0.28
August	18.9	38.4	5.6	0.04	0.28
September	10.6	20.0	3.6	0.10	0.71
October	3.4	9.6	0.2	0.12	0.83
November	0.6	1.8	Nil	0.02	0.14
December	0.1	0.8	,,	0.01	0.07
January	0.1	2.2	,,	0.01	0.07
February	0.4	2.8	,,	0.01	0.08
March	1.1	5.6	,,	Nil	—
April	1.0	2.5	,,	,,	—
May	1.2	4.2	,,	,,	—
Total	**67.2**			**0.35**	

12.—13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Kharif			*Rabi*		
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Total cropped area (T. acres)*
Paddy	*Others*		*Others*		
90.2	7.9	5.3	1.9	0.1	5.4

**based on the statistics of the district as a whole*

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T.acres)*	*Grand Total (T. acres)*
Paddy		*Wheat*		
80.0	4.0	20.0	1.0	5.0

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Kharif	*Rabi*	*Kharif*	*Rabi*	*Overall*
136	207	1.8	0.9	1.6

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects ; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence in Madhya Pradesh ; 50 percent of it is culturable

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

KOTRI-NIBRA HYDEL SCHEME

55C.3-G.11-M.46/Ma.39

1. **Name of State** Madhya Pradesh and Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**
Hydro-electric project; power, 93,000 kW. installed

3. **Source of supply**
Kotri at Paralkot/Indravati/Godavari
Nibra at Sonpur/Indravati/Godavari
Considerable utilisation upstream

4. **Description of the reservoir or tank**
Two storages are proposed, one on Kotri and the other on Nibra. The dam on Kotri wil have a live storage of 80 T.M.C. and an annual evaporation loss of 8 T.M.C.

Other particulars not available

5. **Description of the headworks**

	Kotri	*Nibra*
Dam :	masonry, 2,700 feet long	masonry, 2,700 feet long, 200 feet high
Spillway :	particulars not available	
Outlets :	particulars not available	

6. **Description of the canals** Nil

7. (a) **Nature of investigations carried out up-to-date**
Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

9. to 18. Not applicable

POWER ASPECTS

19. **River supply proposed to be diverted and operation head**

Range of operation head (*feet*)	*Supply passing through turbines* (*cusecs*)
Gross operation head 425 feet	2,000 cusecs **Annual Total 63.0 T.M.C.**

20. **Proposed disposal of tail-race waters** Will be let into the river

21. Quantum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. to 25. Not available

26. Not applicable

27. Not available

28. Main features and purpose of the scheme Generation of power

BORIA TIBHU PROJECT

56C.3-G.11-Ma.40

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme ; flow-cum-storage ; C.C.A. 31,500 acres

3. **Source of supply**

Tributary of Indravati at Darba/Indravati/**Godavari**

Utilisation upstream :
existing : not known
proposed : minor schemes to irrigate 500 acres

4. **Description of the reservoir or tank** .

Live storage	1.04 T.M.C.
Dead storage	0.05 „
Carry-over	Not available
Annual reservoir losses	0.13 T.M.C.
Filling period	June to September
Depletion period	July to June
Catchment area	15 square miles
Area submerged	1,000 acres
Full reservoir level	R. L. 1,357
Minimum pond level	R.L. 1,305

5. **Description of the headworks**

Dam : earthen, 4,200 feet long, 80 feet high
Spillway : particulars not available
Outlets : particulars not available

6. **Description of the canals**

Boria Tibhu Left Bank Canal (contour) ; 13.5 miles long ; perennial ; unlined ; authorised capacity 70 cusecs

Boria Tibhu Right Bank Canal (contour) ; 12 miles long ; perennial ; unlined ; authorised capacity 69 cusecs

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Durg

	Left Bank Canal	*Right Bank Canal*	*Total*
		............*thousand acres*........	
G.C.A.	23.9	21.1	45.0
C.C.A.	16.7	14.8	31.5

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	500 acres	1.6 percent
Kharif	10,000 „	31.8 „
Rabi	2,000 „	6.3 „
Total	**12,500** „	**39.7** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	....	*inches*	......	....*T.M.C.*....	
June	6.9	11.6	2.6	0.02	0.06
July	20.6	48.0	8.4	0.09	0.24
August	19.2	31.7	9.0	0.11	0.30
September	11.1	19.9	3.3	0.25	0.69
October	2.9	10.5	Nil	0.31	0.83
November	0.4	3.1	„	0.05	0.14
December	Nil	Nil	„	0.03	0.08
January	0.3	2.3	„	0.04	0.11
February	0.5	4.5	„	0.04	0.12
March	0.6	4.5	„	0.03	0.08
April	0.9	4.6	„	0.03	0.08
May	0.4	1.7	„	0.03	0.08
Total	**63.8**			**1.03**	

12.-13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Perennial			*Kharif*			*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane	*Others*		*Paddy*	*Others*		*Wheat*	*Others*		
0.1	0.9	0.1	78.0	12.6	9.1	6.5	1.9	0.8	10.0

**assumed on the basis of district average of sown acreage in the tehsil in which the project is situated*

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane		*Paddy*		*Wheat*		
4.0	0.5	80.0	10.0	16.0	2.0	12.5

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
80	136	207	7.6	1.8	0.9	1.9

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence in Madhya Pradesh; roughly 80 percent forests and 20 percent culturable

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

PARWI TANK PROJECT

57C.3-G.11-Ma.41

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A 24,000 acres

3. **Source of supply**

Sub-tributary of Indravati near Parwi/**Godavari**
Utilisation upstream :
existing: nil
proposed: minor tanks to irrigate about 500 acres

4. **Description of the reservoir or tank**

Live storage	0.80 T.M.C.
Dead storage	0.04 ,,
Carry-over	Nil
Annual reservoir losses	0.16 T.M.C.
Filling period	June to September
Depletion period	July to June
Catchment area	11.7 square miles
Area submerged	900 acres
Full reservoir level	R.L. 1,310
Minimum pond level	R.L. 1,255

5. **Description of the headworks**

Dam : earthen, 7,000 feet long, 70 feet high
Spillway: capacity 8,859 cusecs, other particulars not available
Outlets: not available

6. **Description of the canal**

Parwi Canal (contour in first 5 miles, then ridge); left bank; 12 miles long; perennial; unlined; capacity **110 cusecs**

7. **(a) Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheets studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar	
G.C.A.	40,000 acres
C.C.A.	24,000 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	500 acres	2.1 percent
Kharif	8,000 ,,	33.3 ,,
Rabi	1,500 ,,	6.3 ,,
Total	**10,000** ,,	**41.7** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	....	*inches*	....	..... *T.M.C.*......	
June	8.3	19.1	2.5	0.02	0.07
July	21.5	37.7	7.3	0.07	0.24
August	21.0	33.8	7.7	0.09	0.31
September	11.6	24.6	1.0	0.20	0.70
October	3.4	13.0	Nil	0.25	0.85
November	0.3	2.1	,,	0.04	0.14
December	0.1	0.8	,,	0.03	0.10
January	0.2	1.7	,,	0.04	0.14
February	0.5	3.3	,,	0.04	0.15
March	0.9	4.4	,,	0.02	0.07
April	1.3	4.3	,,	0,02	0.07
May	1.1	5.2	,,	0.02	0.07
Total	**70.2**			**0.84**	

12·-13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif		*Rabi*		*Total cropped area (T.acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Wheat*		
97.9	13.7	2.1	0.3	14.0

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Totalarea (T. acres)*	
Sugarcane		*Paddy*		*Wheat*		
5.0	0.5	80.0	8·0	15.0	1.5	10.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec) Overall	*Delta (feet) Overall*
386	1.9

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

About 700 acres of land under forest will be submerged

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation into irrigated agriculture

BHANUPRATABPUR PROJECT 58C.3-G.11-Ma.42

1. Name of State Madhya Pradesh

2. Scope of the scheme or system

Irrigation scheme ; flow-cum-storage ; C.C.A. 17,400 acres

3. Source of supply

Tributary of Indravati near Bodeli/Indravati/**Godavari**

Tributary of Indravati near Dabkatta/Indravati/**Godavari**

Utilisation upstream :

existing : nil

future minor schemes envisage irrigation of 3,000 acres

4. Description of the reservoir or tank

	Bodeli	*Dabkatta*
Live storage T.M.C.	0.87	0.45
Dead storage ,,	0.04	0.02
Carry-over ,,	Not available	Not available
Annual reservoir losses T.M.C.	0.08	0.05
Filling period	June to Sep.	June to Sep.
Depletion period	July to May	July to May
Catchment area (square miles)	12	2.5
Area submerged (acres)	640	400
Full reservoir level R.L.	1,390	1,290
Minimum pond level R.L.	1,300	1,250

5. Description of the headworks

	Bodeli	*Dabkatta*
Dam :	rolled fill, 1,800 feet long, 110 feet high.	rolled fill, 2,100 feet long, 47 feet high.
Spillway :	capacity 8,800 cusecs, other particulars not available.	capacity 3,200 cusecs, other particulars not available.
Outlets :	particulars not available	particulars not available

6. **Description of the canals**

Bodeli Left Bank Canal (contour); 18 miles long; perennial; unlined; authorised capacity **40 cusecs**

Bodeli Feeder Channel (contour); right bank; 7 miles long; perennial; unlined; authorised capacity **70 cusecs**

Dabkatta Right Bank Canal; 4 miles ridge and rest contour; 6 miles long; perennial; unlined; authorised capacity **60 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet study

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

District Bastar

	Bodeli Left Bank Canal	*Bodeli Feeder*	*Dabkatta Right Bank Canal*	*Total*
	............*thousand acres*............			
G.C.A.	11.9	3.1	14.0	29.0
C.C.A.	7.1	1.9	8.4	17.4

10. Area **proposed to be irrigated annually and intensity of irrigation (all canals)**

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	400 acres	2.3 percent
Kharif	8,000 ,,	46.0 ,,
Rabi	1,600 ,,	9.2 ,,
Total	**10,000 ,,**	**57.5 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*............			......*T.M.C.*......	
June	6.9	17.6	2.6	0.01	0.02
July	20.7	48.0	8.4	0.07	0.15
August	19.2	31.7	9.0	0.09	0.20
September	11.1	19.9	3.3	0.20	0.45
October	2.9	10.5	Nil	0.25	0.55
November	0.3	3.1	,,	0.04	0.09
December	Nil	Nil	,,	0.03	0.07
January	0.3	2.3	,,	0.03	0.07
February	0.6	4.5	,,	0.03	0.07
March	0.6	4.5	,,	0.02	0.04
April	1.0	4.6	,,	0.02	0.05
May	0.4	1.7	,,	0.02	0.04
Total	**64.0**			**0.81**	

12.-13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Kharif*			*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane	*Others*		*Paddy*	*Others*		*Wheat*	*Others*		
0.1	0.9	0.1	78.0	12.6	7.7	6.5	1.9	0.7	8.5

15. **(a) Proposed pattern of irrigated cultivation**

Perennial		Kharif		Rabi		Grand Total (T. acres)
Percentage of principal crops	Total area (T. acres)	Percentage of principal crops	Total area (T. acres)	Percentage of principal crops	Total area (T. acres)	
Sugarcane		Paddy		Wheat		
4.0	0.4	80.0	8.0	16.0	1.6	10.0

(b) Are there any rules for regulating crop pattern? No

16. **Duty and Delta at canal head (as anticipated)**

Duty (acres per mean cusec)			Delta (feet)			
Perennial	Kharif	Rabi	Perennial	Kharif	Rabi	Overall
80	136	207	7.6	1.8	0.9	1.9

17. **(a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. **Quantum of river supplies available in relation to withdrawals**

River supply data not available

19. to 21. Not applicable

GENERAL

22. **Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns**

Nil

23. **Extent and type of area submerged by reservoir**

Bodeli 640 acres, Dabkatta 400 acres, partly hilly and partly culturable land

24. to 26. Not available

27. Not applicable

28. **Main features and purpose of the scheme**

Development of tribal areas; conversion of rain-fed cultivation to irrigated agriculture

HATKONDA SCHEME

59C.3-G.11-Ma.43

1. Name of State Madhya Pradesh

2. Scope of the scheme or system

Irrigation scheme; flow-cum-storage ; C.C.A. 14,700 acres

3. Source of supply

Tributary of Khandi at Hatkonda/Khandi/Indravati/**Godavari**
Utilisation upstream :
existing : nil
minor schemes visualise irrigation of about 500 acres

4. Description of the reservoir or tank

Live storage	..	0.49 T.M.C.
Dead storage	...	0.04 „
Carry-over	...	Not available
Annual reservoir losses	...	0.12 T.M.C.
Filling period	...	June to September
Depletion period	...	July to February
Catchment area	...	8 square miles
Area submerged	...	900 acres
Full reservoir level	...	R.L. 1,265
Minimum pond level	...	R.L. 1,240

5. Description of the headworks

Dam : earthen, 2,100 miles long, 59 feet high
Spillway : particulars not available
Outlets : particulars not available

6. Description of the canal (Tentative)

Hatkonda Canal; right bank; 8 miles long; two-seasonal; unlined; authorised capacity **54 cusecs**

7. (a) Nature of investigations carried out up-to-date

Field investigations not yet undertaken ; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

G.C.A.	21,000 acres
C.C.A.	14,700 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	4,000 acres	27.2 percent
Rabi	1,000 ,,	6.8 ,,
Total	**5,000 ,,**	**34.0 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*..........			....*T.M.C.*.....	
June	6.9	11.6	2.6	Nil	—
July	20.7	48.0	8.4	0.03	0.21
August	19.2	31.7	9.0	0.04	0.28
September	11.1	19.9	3.3	0.09	0.64
October	2.9	10.5	Nil	0.12	0.83
November	0.3	3.1	,,	0.02	0.14
December	Nil	Nil	,,	0.01	0.07
January	0.3	2.3	,,	0.01	0.07
February	0.6	4.5	,,	0.01	0.08
March	0.6	4.5	,,	Nil	—
April	1.0	4.6	,,	,,	—
May	0.4	1.7	,,	,,	—
Total	**64.0**			**0.33**	

12.—13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Kharif			*Rabi*		*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy	*Others*		*Others*		
50.3	33.5	6.16	16.2	1.19	7.35

**has been taken to be the same as that of the tehsil in which the project is situated.*

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Wheat*		
80.0	4.0	20.0	1.0	5.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Kharif	*Rabi*	*Kharif*	*Rabi*	*Overall*
136	207	1.8	0.9	1.5

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns .

Nil

23. Extent and type of area submerged by reservoir

Entire submergence lies in Madhya Pradesh

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Development of tribal areas

KOKRAL SCHEME

60C.3-G.11-Ma.44

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Multipurpose scheme ; flow-cum-storage; irrigation, C.C.A. 6,000 acres ; power, 3,000 kW. installed

3. **Source of supply**

Kokral near Hurra Penjori/Indravati/Godavari
Utilisation upstream :
existing : nil
contemplated: 0.30 T.M.C.

4. **Description of the reservoir or tank**

Live storage	1.60 T.M.C.
Dead storage	0.08 ,,
Carry-over	0.30 ,,
Annual reservoir losses	0.20 ,,
Filling period	June to September
Depletion period	July to June
Catchment area	25.0 square miles
Area submerged	1,300 acres
Full reservoir level	R.L. 2,030
Dead storage level	R.L. 1,960

5. **Description of the headworks**

Dam : 2,500 feet long, 95 feet high, other particulars not available
Spillway : particulars not available
Outlets : particulars not available
Pick-up weir near Khargone: particulars not available

6. Not available

7. (a) **Nature of investigations carried out up-to-date**

Preliminary investigations only

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

G.C.A.	10,000	acres
C.C.A.	6,000	„

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated		*Intensity of irrigation*	
Perennial	500	acres	8.3	percent
Kharif	3,000	„	50.0	„
Rabi	1,500	„	25.0	„
Total	**5,000**	„	**83.3**	„

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	........*inches*...........			......*T.M.C.*......	
June	8.2	19.1	2.5	0.01	Not available
July	21.5	37.7	7.4	0.03	
August	21.0	33.8	7.7	0.03	
September	11.6	21.5	1.0	0.08	
October	3.4	13.0	0.1	0.10	
November	0.3	2.1	Nil	0.02	
December	0.1	0.8	„	0.03	
January	0.2	1.7	„	0.04	
February	0.5	2.0	„	0.05	
March	0.9	4.4	„	0.03	
April	1.3	4.3	„	0.03	
May	1.1	5.2	„	0.03	
Total	**70.1**			**0.48**	

12. to 14. Not available

15. (a) Proposed pattern of irrigated cultivation

Perennial		Kharif		Rabi		Grand Total (T. acres)
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane		*Paddy*		*Wheat*		
10.0	0.5	60.0	3.0	30.0	1.5	5.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
80	136	206	7.6	1.9	0.9	2.2

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Range of operation head (feet)	*Supply passing through turbines (cusecs)*
Gross operation head —650 feet	35 cusecs to 40 cusecs
Power output 3,000 kW.	
at 60 percent load factor	annual say **1.2** T.M.C.

20. Proposed disposal of tail-race waters

The tail-race waters will be diverted in part for irrigation

21. Quantum of river supplies available in relation to withdrawals

As per item 18 above

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence within Madhya Pradesh; about 30 per cent culturable, rest forest clad

24. to 27. Not available

28. Main features and purpose of the scheme

Irrigation and power development

JALLAVAGU SCHEME

61C.3-G.11-Ma.45

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Multipurpose scheme; flow-cum-storage; irrigation, C.C.A. 8,400 acres; power, 2,650 kW. installed

3. **Source of supply**

Jallavagu near Gurumetta/Indravati/**Godavari**

Utilisation upstream:

existing : nil

contemplated : minor schemes 0.80 T.M.C.

4. **Description of the reservoir or tank**

Live storage	2.80 T.M.C.
Dead storage	0.28 ,,
Carry-over	0.50 ,,
Annual reservoir losses	0.35 ,,
Filling period	June to September
Depletion period	July to June
Catchment area	38 square miles
Area submerged	1,920 acres
Full reservoir level	R.L. 870
Dead storage level	R.L. 790

5. **Description of the headworks**

Dam :	2,000 feet long, 110 feet high; other particulars not available
Spillway :	particulars not available
Outlets :	particulars not available
Pick-up weir near Chillamarka:	particulars not available

6. **Description of the canals**

Capacity 107 **cusecs;** other particulars not available

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken, present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar	
G.C.A.	14,000 acres
C.C.A.	8,400 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	500 acres	6.0 percent
Kharif	7,000 ,,	83.3 ,,
Rabi	5,000 ,,	59.5 ,,
Total	**12,500** ,,	**148.8** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	. . . .	*inches*		. . . . *T.M.C.* . .	
June	7.7	15.9	2.3	0.02	0.07
July	23.5	36.0	1.3	0.06	0.21
August	21.0	38.8	8.6	0.08	0.28
September	10.6	22.1	3.1	0.18	0.65
October	3.6	10.7	0.4	0.22	0.77
November	0.5	1.9	Nil	0.04	0.14
December	0.1	1.2	,,	0.15	0.52
January	0.2	2.3	,,	0.20	0.70
February	0.4	2.8	,,	0.22	0.85
March	0.9	6.8	,,	0.18	0.63
April	1.0	3.6	,,	0.02	0.07
May	0.9	3.6	,,	0.02	0.07
Total	**70.4**			**1.39**	

12. to 14. Not available

15. (a) Proposed pattern of irrigated cultivation

Perennial		Kharif		Rabi				Grand Total (T. acres)
Percentage of principal crops	Total area (T. acres)	Percentage of principal crops	Total area (T. acres)	Percentage of principal crops			Total area (T. acres)	
Sugarcane		Paddy		Wheat	Paddy	Green manure		
4.0	0.5	56.0	7.0	8.0	28.0	4.0	5.0	12.5

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)					Delta (feet)					
Perennial	Kharif	Rabi			Perennial	Kharif	Rabi			Overall
Sugarcane	Paddy	Wheat	Paddy	Green manure	Sugarcane	Paddy	Wheat	Paddy	Green manure	
80	136	207	60	227	7.6	1.9	0.9	4.0	0.4	2.6

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Range of operation head (feet)	Supply passing through turbines (cusecs)
Gross operation head— 400 feet	55 cusecs to 60 cusecs

Power output 2,650 kW.
at 60 percent load factor

Total : annual say **1.8** T.M.C.

20. Proposed disposal of tail-race waters

The tail-race waters will be picked up for irrigation about ½ mile downstream of the Power House.

21. Quantum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power ; water supply (month-wise), if any, required for these aspects ; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submerged area within Madhya Pradesh and forest clad

24. to 27. Not available

28. Main features and purpose of the scheme

Irrigation and power development

TALPERU PROJECT

62C.3-G.10-Ma.46

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 6,000 acres

3. **Source of supply**

Taleru near Peddapora/**Godavari**
Utilisation upstream :
existing : nil
proposed : nil

4. **Description of the reservoir or tank (Tentative)**

Live storage	0.33 T.M.C.
Dead storage	0.05 ,,
Carry-over	Not available
Annual reservoir losses	0.06 T.M.C.
Filling period	June to September
Depletion period	July to February
Catchment area	8.4 square miles
Area submerged	450 acres
Full reservoir level	R.L. 1,490
Minimum pond level	R.L. 1,460

5. **Description of the headworks**

Dam : 1,000 feet long, 80 feet high, other particulars not available
Spillway : particulars not available
Outlets : particulars not available

6. **Description of the canals**

Talperu Left Bank Canal (contour); 13 miles long; two-seasonal; unlined; capacity **18 cusecs**

Talperu Right Bank Canal (contour); 17 miles long; two seasonal; unlined; capacity **47 cusecs**

7. **(a) Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise (both canals)

District	Bastar
G.C.A.	11,800 acres
C.C.A.	6,000 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	4,000 acres	66.7 percent
Rabi	1,000 „	16.6 „
Total	**5,000 „**	**83.3 „**

11. Normal rainfall and river supply proposed to be diverted for both canals

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	........*inches*..........			...*T.M.C.*......	
June	8.0	13.0	3.3	Nil	—
July	18.2	28.5	6.1	0.04	0.23
August	16.7	29.3	8.1	0.06	0.34
September	9.0	20.5	3.2	0.12	0.71
October	3.9	10.5	0.2	0.15	0.86
November	1.2	8.4	Nil	0.03	0.18
December	0.1	1.0	„	0.03	0.17
January	0.2	1.6	„	0.02	0.11
February	0.2	1.6	„	0.02	0.13
March	0.8	3.8	„	Nil	—
April	1.5	4.1	„	„	—
May	1.8	6.0	„	„	—
Total	**61.6**			**0.47**	

12.—13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Kharif			*Rabi*		*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy	*Others*		*Wheat and Others*		
84.0	11.0	1.9	5.0	0.1	2.0

**based on district statistics*

15. (a) Proposed pattern of irrigated cultivation

Kharif			*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy	*Others*		*Wheat*	*Others*		
75.0	5.0	4.0	15.0	5.0	1.0	5.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Kharif	*Rabi*	*Kharif*	*Rabi*	*Overall*
136	207	1.8	0.9	2.2

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submerged area in Madhya Pradesh, mostly forest land

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

MUKPARA PROJECT

63C.3-G.10-Ma.47

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Multipurpose scheme; irrigation, C.C.A. 11,500 acres; power, 7,000 kW. installed

3. **Source of supply**

Talperu near Mukpara/**Godavari**
Utilisation upstream:
existing : nil
proposed: irrigation of 10,000 acres

4. **Description of the reservoir or tank**

Live storage	7.00 T.M.C.
Dead storage	0.40 „
Carry-over	Not available
Annual reservoir losses	1.35 T.M.C.
Filling period	June to August
Depletion period	July to June
Catchment area	84 square miles
Area submerged	7,700 acres
Full reservoir level	R.L. 1,390
Dead storage level	Not known

5. **Description of the headworks**

Dam : 10,000 feet long, 140 feet high, other particulars not available

Spillway : particulars not available

Outlets : particulars not available

6. **Description of the canal**

Capacity of canal — **141 cusecs;** other particulars not available

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar	
G.C.A.	15,000 acres
C.C.A.	11,500 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	1,000 acres	8.7 percent
Kharif (Paddy)	8,000 ,,	69.6 ,,
Rabi (Wheat)	2,000 ,,	17.4 ,,
(Paddy)	4,000 ,,	34.8 ,,
Total	**15,000** ,,	**130.5** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*............			......*T.M.C.*......	
June	7.8	15.0	2.5	0.04	0.11
July	22.0	37.0	7.2	0.07	0.19
August	18.9	38.4	5.6	0.09	0.24
September	10.6	20.0	3.6	0.21	0.58
October	3.3	9.6	0.2	0.27	0.71
November	0.6	1.8	Nil	0.05	0.14
December	0.1	0.1	,,	0.18	0.48
January	0.1	2.2	,,	0.25	0.66
February	0.4	2.8	,,	0.29	0.85
March	1.1	5.6	,,	0.23	0.61
April	1.0	2.5	,,	0.04	0.11
May	1.2	4.2	,,	0.04	0.11
Total	**67.1**			**1.76**	

12. to 14. Not available

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*			
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Grand Total (T. acres)*
Sugarcane		*Paddy*		*Wheat*	*Paddy*		
6.7	1.0	53.3	8.0	13.3	26.7	6.0	15.0

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)				*Delta (feet)*				
Perennial	*Kharif*	*Rabi*		*Perennial*	*Kharif*	*Rabi*		*Overall*
Sugarcane	*Paddy*	*Wheat*	*Paddy*	*Sugarcane*	*Paddy*	*Wheat*	*Paddy*	
80	136	207	60	7.6	1.8	0.9	4.0	2.7

17.-18. Not available

19. River supply proposed to be diverted and operation head

Gross operation head — 645 feet

Power installed — 7,000 kW.

Load factor — 60 percent.

Mean supply passing through turbines = 100 cusecs; 3.15 T.M.C. annually

20. Proposed disposal of tail-race waters

Part of the tail-race waters will be used for irrigation, rest will be let down the river

21. Quantum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence within Madhya Pradesh (mostly forest clad)

24. to 27. Not available

28. Main features and purpose of the scheme

Irrigation and power development; development of tribal area

KORAMNAR SCHEME

64C.3-G.10-Ma.48

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Multipurpose scheme; flow-cum-storage; irrigation, C.C.A. 5,000 acres; power, 1,000 kW. installed

3. **Source of supply**

Koramanar/Talperu/**Godavari**
Utilisation upstream:
existing: nil
contemplated: nil

4. **Description of the reservoir or tank**

Live storage	1.10 T.M.C.
Dead storage	0.10 ,,
Carry-over	0.20 ,,
Annual reservoir losses	0.18 ,,
Filling period	June to September
Depletion period	July to June
Catchment area	14 square miles
Area submerged	896 acres
Full reservoir level	R.L. 1,140
Dead storage level	R.L. 1,085

5. **Description of the headworks**

Dam:	earthen, 3,000 feet long, 70 feet high, other particulars not available
Spillway:	particulars not available
Outlets:	particulars not available
Pick-up weir:	particulars not available

6. Not available

7. **(a) Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

G.C.A.	10,000 acres
C.C.A.	5,000 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	2,800 acres	56.0 percent
Rabi	2,000 ,,	40.0 ,,
Total	**4,800 ,,**	**96.0 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*..........			..*T.M.C.*..	
June	7.8	15.0	2.5	Nil	
July	22.0	37.0	7.2	0.02	Not available
August	18.9	38.4	5.6	0.03	
September	10.6	20.0	3.6	0.07	
October	3.3	9.6	0.2	0.08	
November	0.6	1.8	Nil	0.03	
December	0.1	0.8	,,	0.03	
January	0.1	2.2	,,	0.03	
February	0.4	2.8	,,	0.03	
March	1.1	5.6	,,	Nil	
April	1.0	2.5	,,	,,	
May	1.2	4.2	,,	,,	
Total	**67.1**			**0.32**	

12. to 14. Not available

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Wheat*		
58.3	2.8	41.7	2.0	4.8

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Kharif	*Rabi*	*Kharif*	*Rabi*	*Overall*
136	206	1.8	0.9	1.5

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Gross operation head 360 feet

Power output 1,000 kW. at 60 percent load factor

Supply passing through turbines 20 to 25 cusecs Total : 0.63 T.M.C. to 0.79 T.M.C., say **0.70 T.M.C.** annually

20. Proposed disposal of tail-race waters

Tail-race waters will be diverted for irrigation

21. Quantum of river supplies available in relation to withdrawals

As per item 18 above

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submerged area within Madhya Pradesh and mostly forest clad

24. to 27. Not available

28. Main features and purpose of the scheme

Irrigation and power development

VANKAMADUGU PROJECT

65C.3-G.10-Ma.49

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 10,500 acres

3. **Source of supply**

(i) Vankamadugu near Virapuram/Gubbal vagu/**Godavari**
(ii) Vankamadugu near Hirapuram/Gubbal vagu/**Godavari**
Utilisation upstream :
existing : nil
proposed : nil

4. **Description of the reservoir or tank (Tentative)**

	Virapuram Reservoir	*Hirapuram Feeder Reservoir*
Live storage	0.22 T.M.C.	0.17 T.M.C.
Dead storage	0.03 ,,	0.03 ,,
Carry-over	Not yet worked out	Not yet worked out
Annual reservoir losses	0.07 T.M.C.	0.05 T.M.C.
Filling period	June to September	June to September
Depletion period	July to February	July to February
Catchment area	3 square miles	3 square miles
Area submerged	480 acres	340 acres
Full reservoir level	R. L. 480	R.L. 480
Minimum pond level	R. L. 460	R,L. 460

5. **Description of the headworks (Tentative)**

	Virapuram dam	*Hirapuram dam*
Dam :	5,000 feet long, 55 feet high, other particulars not available	2,500 feet long, 45 feet high, other particulars not available
Spillway :	particulars not available	
Outlets :	particulars not available	

6. **Description of the canal**

Vankamadugu Canal (contour); left bank; 6 miles long; two-seasonal; unlined; capacity **52 cusecs**

7. (a) Nature of investigations carried out up-to-date

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

G.C.A.	17,500 acres
C.C.A.	10,500 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	4,000 acres	38.1 percent
Rabi	800 „	7.6 „
Total	**4,800 „**	**45.7 „**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	.... *inches*			.... *T.M.C.*	
June	6.9	15.6	1.4	Nil	—
July	16.6	32.7	4.7	0.03	0.22
August	14.4	26.5	6.6	0.04	0.29
September	8.3	21.2	3.3	0.10	0.74
October	3.6	7.5	0.6	0.12	0.86
November	1.0	3.3	Nil	0.02	0.15
December	0.3	3.9	„	0.01	0.07
January	Nil	0.2	„	0.01	0.07
February	0.1	1.2	„	0.01	0.08
March	0.5	4.7	„	Nil	—
April	1.6	4.2	„	„	—
May	1.4	3.6	„	„	—
Total	**54.7**			**0.34**	

12.-13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Kharif			*Rabi*		*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy	*Others*		*Others*		
90.8	7.6	6.2	1.6	0.1	6.3

**Crop pattern and cultivated area worked out on the basis of district statistics.*

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy and Others		*Wheat and Others*		
83.3	4.0	16.7	0.8	4.8

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Kharif	*Rabi*	*Kharif*	*Rabi*	*Overall*
136	207	1.8	0.9	1.6

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence in Madhya Pradesh, all forest clad

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

JORANVAGU PROJECT

66C.3-G.10-Ma.50

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 18,900 acres

3. **Source of supply**

Joranvagu near Messiguda/**Godavari**
Utilisation upstream :
existing : nil
proposed: 1,000 acres under minor schemes

4. **Description of the reservoir or tank**

Live storage	1.14 T.M.C.
Dead storage	0.16 ,,
Carry-over	Not available
Filling period	July to September
Annual reservoir losses	0.14 T.M.C.
Depletion period	July to June
Catchment area	24 square miles
Area submerged	1,100 acres
Full reservoir level	R.L. 800
Minimum pond level	R.L. 740

5. **Description of the headworks**

Dam:	2,800 feet long (subsidiary 2,640 feet), 125 feet high, other particulars not available
Spillway:	particulars not available
Outlets:	particulars not available

6. **Description of the canals**

Joranvagu Left Bank Canal (contour); 6 miles long; perennial; unlined; authorised capacity **23 cusecs**

Joranvagu Right Bank Canal (contour); 21 miles long; perennial; unlined; authorised capacity **117 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

	Left Bank Canal	*Right Bank Canal*	*Total*
	..................*thousand acres*..........	....	....
G.C.A.	4.4	22.6	27.0
C.C.A.	3.0	15.9	18.9

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	1,000 acres	5.3 percent
Kharif	10,000 ,,	52.9 ,,
Rabi	5,500 ,,	29.1 ,,
Total	**16,500 ,,**	**87.3 ,,**

11. Normal rainfall and river supply proposed to be diverted (both canals)

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	................*inches*...	...	...	....*T.M.C.*.....	
June	7.7	15.1	2.3	0.03	0.08
July	17.3	28.3	6.6	0.09	0.24
August	15.3	22.5	7.7	0.11	0.29
September	9.9	19.6	4.6	0.26	0.72
October	4.3	10.6	0.3	0.32	0.85
November	1.2	5.8	Nil	0.06	0.17
December	0.2	3.6	,,	0.14	0.37
January	0.1	0.8	,,	0.17	0.45
February	0.1	0.9	,,	0.19	0.56
March	0.7	5.3	,,	0.16	0.43
April	1.6	7.1	,,	0.05	0.14
May	2.2	5.4	0.4	0.05	0.13
Total	**60.6**			**1.63**	

12.-13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Kharif*			*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane	*Others*		*Paddy*	*Others*		*Wheat*	*Others*		
0.1	0.8	0.1	84.0	12.5	10.9	0.7	1.9	0.3	11.3

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*				*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Sugarcane		*Paddy*		*Wheat*	*Paddy*	*Green manure*		
6.1	1.0	60.6	10.0	12.1	15.2	6.0	5.5	16.5

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)					*Delta (feet)*					
Perennial	*Kharif*	*Rabi*			*Perennial*	*Kharif*	*Rabi*			
Sugarcane	*Paddy*	*Wheat*	*Paddy*	*Green manure*	*Sugarcane*	*Paddy*	*Wheat*	*Paddy*	*Green manure*	*Overall*
80	136	207	60	227	7.6	1.8	0.9	4.0	0.4	2.3

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Two small tanks, area included in the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Submergence entirely in Madhya Pradesh

24. to. 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

SABARI MULTIPURPOSE PROJECT 67C.3-G.12-Ma.51

1. Name of State Madhya Pradesh and Orissa

2. Scope of the scheme or system

Multipurpose scheme ; flow-cum-storage; irrigation, C.C.A. 400,000 acres in Madhya Pradesh and 400,000 acres in Orissa; power, 250,000 kW. installed

3. Source of supply

Sabari (Kolab) at Taluru and Taluar/**Godavari**
Utilisation upstream: minor schemes only

4. Description of the reservoir or tank

	Reservoir at Taluru
Live storage	100.0 T.M.C.
Dead storage	5.0 „
Carry-over	30.0 „
Annual reservoir losses	8.0 „
Filling period	Not available
Depletion period	Not available
Catchment area	1,280 square miles
Area submerged	44,672 acres
Full reservoir level	Not available
Minimum pond level	Not available

5. Description of the headworks

A pick-up weir at Taluar; other particulars not available

6. Description of the canals

(i) Taluru Power Canal (contour); left bank in Orissa; other particulars not available
(ii) Sabari Right Bank Canal in Madhya Pradesh (contour); 90 miles long; perennial: unlined; capacity **3,600 cusecs**
(iii) Sabari Left Bank Canal in Orissa; other particulars not available

7. (a) Nature of investigations carried out up-to-date

No field investigations have been undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

Item	*Names of districts*		*Total*
	Bastar (Madhya Pradesh)	*Koraput (Orissa)*	
	...............*thousand acres*..........		
G.C.A.	900.0	Not available	Not available
C.C.A.	400.0	400.0	800.0

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated		*Intensity of irrigation*
	Madhya Pradesh	*Orissa*	
Perennial	40,000 acres	40,000 acres	10.0 percent
Kharif	250,000 ,,	250,000 ,,	62.5 ,,
Rabi	240,000 ,,	240,000 ,,	60.0 ,,
Total	530,000 ,,	530,000 ,,	132.5 ,,

Month	*Rainfall*			*River supply proposed to be diverted*	
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	
	............*inches*............			....*T.M.C.*....	
				Madhya Pradesh	Orissa
June	6.9	15.6	2.8	1.40	1.40
July	16.7	32.7	4.7	2.17	2.17
August	14.3	25.4	Nil	2.71	2.71
September	8.3	21.2	,,	6.67	6.67
October	3.6	7.5	,,	8.30	8.30
November	1.0	3.3	,,	2.50	2.50
December	0.3	3.9	,,	5.41	5.41
January	Nil	0.2	,,	7.80	7.80
February	0.1	1.2	,,	8.56	8.56
March	0.5	4.7	,,	6.90	6.90
April	1.6	4.2	,,	2.09	2.09
May	1.4	3.2	,,	2.09	2.09
Total	**54.7**			**56.60**	**56.60**

Total for both canals **113.20 T.M.C.**

12 to 17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available; there is a possibility of inter linking the Kolab river with the Indravati, upstream of the reservoir

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Range of operation head (feet)	*.Supply passing through turbines (cusecs)*
700 feet	3,000 cusecs **annual 94.61 T.M.C.**

20. Proposed disposal of tail-race waters

The tail-race waters will be let into the river to be pickedup at Taluar for irrigation

21. Quantum of river supplies available in relation to withdrawals

Same as per item 18 above

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects, financial returns

Nil

23. Extent and type of area submerged by reservoir

Submergence 27,712 acres in Madhya Pradesh and 16,960 acres in Orissa, most of the area is forest clad.

24. to 27. Not available

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture; reclamation of forest land for cultivation and power generation

KONTA PROJECT 68C.3-G.12-Ma.52

1. **Name of State** Madhya Pradesh and Orissa

2. **Scope of the scheme or system**

Multipurpose scheme ; flow-cum-storage ; power, 50,000 kW. (installed); irrigation, C.C.A. 20,000 acres

3. **Source of supply**

Sabari near Konta/**Godavari** and tail-race waters of Balimela Power Station

Utilisation upstream :

existing : minor schemes only
proposed : considerable

4. **Description of the reservoir or tank**

Live storage	38.0 T.M.C.
Dead storage	3.0 „
Carry-over	Not available
Annual reservoir losses	5.0 T.M.C.
Filling period	June to September
Depletion period	June to May
Catchment area	3,480 square miles
Area submerged	23,680 acres
Full reservoir level	R. L. 270
Minimum pond level	R. L. 200

5. **Description of the headworks**

Dam : 10,000 feet long, 150 feet high, other particulars not available
Spillway : particulars not available
Outlets : particulars not available

6. **Description of the canal**

Konta canal (Madhya Pradesh); right bank; perennial; unlined; authorised capacity **150 cusecs**

Motu canal (Orissa); left bank; perennial ; unlined ; authorised capacity **150 cusecs**

7. **(a) Nature of investigations carried out up-to-date**

Field investigations not yet undertaken, present proposals based on topo-sheet studies

(b) Not available

8. Not avalilable

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District	*Bastar (Madhya Pradesh)*	*Koraput (Orissa)*	*Total*
G.C.A.	18,000 acres	18,000 acres	36,000 acres
C.C.A.	10,000 „	10,000 „	20,000 „

10. Area proposed to be irrigated annually and intensity of irrigation (both canals)

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	4,000 acres	20.0 percent
Kharif	16,000 „	80.0 „
Rabi	10,000 „	50.0 „
Total	30,000 „	**150.0** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*
	Normal	*Maximum*	*Minimum*	
1	2	3	4	5
		..........*inches*..........		......*T.M.C.*......
June	6.9	15.6	2.8	
July	16.7	32.7	4.7	
August	14.3	25.4	Nil	Not available
September	8.3	21.2	„	
October	3.6	7.5	„	
November	1.0	3.3	„	
December	0.3	3.9	„	
January	Nil	0.2	„	
February	0.1	1.2	„	
March	0.5	4.7	„	
April	1.6	4.2	„	
May	1.4	3.2	„	
Total	**54.7**			**4.0**

12. to 14. Not available

15. (a) Proposed pattern of irrigated cultivation (both canal)

Perennial		*Kharif*		*Rabi*			
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T acres)*	*Grand Total (T. acres)*
Others		*Paddy*		*Paddy*	*Wheat*		
13.3	4.0	53.3	16.0	26.7	6.7	10.0	30.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)				*Delta (feet)*				
Perennial	*Kharif*	*Rabi*		*Perennial*	*Kharif*	*Rabi*		*Overal*
	Paddy	*Paddy*	*Wheat*		*Paddy*	*Paddy*	*Wheat*	
80	136	60	207	7.6	1.8	4.0	0.9	3.0

17.- 18. Not available

19. River supply proposed to be diverted and operation head

Range of operation head: 70—140 feet

Supply passing through turbines : 2,500 cusecs (including regulated flow from upstream storages); annually 78.8 T.M.C.

20. Proposed disposal of tail-race waters

The tail-race waters will be let into the river

21. Quantum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects ; financial returns

Flood protection to Konta town

23. Extent and type of area submerged by reservoir

Submergence will be in both Madhya Pradesh and Orissa; other particulars not available

24. to 27. Not available

28. Main features and purpose of the scheme

Power generation, irrigation and flood control

BARU NADI PROJECT

69C.3-G.12-Ma.53

1. Name of State Madhya Pradesh

2. Scope of the scheme or system

Irrigation scheme ; flow-cum-storage; C.C.A. 40,800 acres

3. Source of supply

Baru near Tongapli/Sabari (Kolab)/**Godavari**
Utilisation upstream:
existing : nil
proposed minor schemes for irrigation of 1,000 acres

4. Description of the reservoir or tank

Live storage	2.00 T.M.C.
Dead storage	0.12 ,,
Carry-over	Not available
Annual reservoir losses	0.20 T.M.C.
Filling period	June to September
Depletion period	July to June
Catchment area	88 square miles
Area submerged	1,200 acres
Full reservoir level	R.L. 1,020
Minimum pond level	R.L. 955

5. Description of the headworks

Dam :	2,200 feet long, 140 feet high, other particulars not available
Spillway :	particulars not available
Outlets :	particulars not available

6. Description of the canals

Baru Nadi Left Bank Canal (contour); 11 miles long; perennial; unlined; capacity **130 cusecs**

Baru Nadi Right Bank Canal (contour); 18 miles long; perennial; unlined; capacity **200 cusecs**

7. (a) Nature of investigations carried out up-to-date

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

	Right Bank Canal	*Left Bank Canal*	*Total*
	..............*thousand acres*..............		
G.C.A.	40.8	27.5	68.3
C.C.A.	24.5	16.3	40.8

10. Area proposed to be irrigated annually and intensity of irrigation (both canals)

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	1,500 acres	3.7 percent
Kharif	25,000 „	61.3 „
Rabi	5,000 „	12.2 „
Total	**31,500 „**	**77.2 „**

see also **Kaklur Mupari Scheme (70C. 3-G.11-Ma.54)**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	.............*inches*............			........*T.M.C.*.......	
June	7.6	15.0	2.3	0.05	0.06
July	17.3	28.8	6.6	0.22	0.25
August	15.3	22.5	7.7	0.27	0.31
September	9.8	19.3	4.6	0.57	0.67
October	4.3	10.6	0.5	0.79	0.89
November	1.2	5.8	Nil	0.13	0.15
December	0.2	3.6	„	0.09	0.10
January	0.2	0.8	„	0.09	0.10
February	0.1	0.9	„	0.12	0.15
March	0.7	5.4	„	0.08	0.09
April	1.6	7.1	„	0.08	0.09
May	2.1	5.4	0.4	0.08	0.09
Total	**60.4**			**2.57**	

12.-13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Kharif			*Rabi*		*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy	*Others*		*Others*		
90.2	7.3	11.7	2.5	0.3	12.0

**based on district statistics*

15. (a) Proposed pattern of irrigated cultivation (both canals)

Perennial		*Kharif*		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane		*Paddy*		*Wheat*		
4.8	1.5	79.3	25.0	15.9	5.0	31.5

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
80	136	207	7.6	1.8	0.9	1.9

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects, financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire Submergence within Madhya Pradesh, all forest clad

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture and reclamation of forest and waste lands

KAKLUR-MUPARI SCHEME

70C.3-G.11-Ma.54

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

   Multipurpose scheme; flow-cum-storage; irrigation, C.C.A. 40,800 acres; power, 7,300 kW. installed

3. **Source of supply**

   Kaklur at Jadiapara/Indravati/**Godavari**
   Mupari/Sabari/**Godavari**
   Utilisation upstream :
   existing: nil
   contemplated : not available

4. **Description of the reservoir or tank**

	Kaklur Reservoir	*Mupari Reservoir*
Live storage	3.00 T.M.C. +0.60 „ from Rani Nalla	1.00 T.M.C.
Dead storage	0.15 „	0.05 „
Carry-over	0.70 „	0.20 „
Annual reservoir losses	0.30 „	0.10 „
Filling period	July to Sep.	July to Sep.
Depletion period	July to June	July to June
Catchment area	48 square miles +10 square miles of Rani Nalla	18 square miles
Area submerged	1,500 acres	400 acres
Full reservoir level	R.L. 2,110	R.L. 1,860
Dead storage level	R.L. 1,950	R.L. 1,760

5. **Description of the headworks**

	Kaklur	*Mupari*
Dam :	3,700 feet long, 120 feet high, other particulars not available	4,230 feet long, 120 feet high, other particulars not available
Spillway :	Not available	Not available
Outlets :	Not available	Not available

6. **Description of the canals**

   Capacity **253 cusecs;** other particulars not available

7. (a) Nature of investigations carried out up-to-date

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

G.C.A.	68,300 acres
C.C.A.	40,800 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated
Kharif (Paddy)	10,000 acres
Rabi (Paddy)	10,000 „
Total	**20,000** „

Thus raising total irrigated area under Baru Nadi Project **69C.3-G.12-Ma.53** to 51,500 acres and intensity of irrigation to 128 percent

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..............*inches*..........			....*T.M.C.*.....	
June	8.0	12.0	4.8	Nil	—
July	18.2	28.5	6.1	0.09	0.13
August	16.7	29.3	8.1	0.11	0.16
September	9.0	20.5	0.3	0.24	0.37
October	3.9	10.2	0.2	0.31	0.46
November	1.2	5.0	Nil	0.04	0.06
December	0.1	1.0	„	0.35	0.32
January	0.2	1.6	„	0.44	0.65
February	0.2	1.6	„	0.52	0.85
March	0.8	3.8	„	0.44	0.65
April	1.5	4.1	„	Nil	—
May	1.8	6.0	„	„	—
Total	**61.6**			**2.54**	

12. to 14. Not available

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Paddy*		
50.0	10.0	50.0	10.0	20.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Kharif Paddy	*Rabi Paddy*	*Kharif Paddy*	*Rabi Paddy*	*Overall*
136	60	1.8	4.0	2.9

17.-18. Not available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

	Gross operation head	*Power output at 60% load factor*	*Supply passing through turbines (cusecs)*
Kaklur	460 feet	4,800 kW.	80 to 100 cusecs
Mupari	750 feet	2,500 kW.	30 cusecs

Kaklur	2.52 T.M.C. to 3.15 ,,
Mupari	0.95 ,,
Total say	**4.00** ,,

20. Proposed disposal of tail-race waters

Kaklur tail-race waters join the Baru Nadi Reservoir while Mupari tail-race waters join Baru Right Bank Canal; part of the tail-race waters will be used for additional irrigation under Baru Nadi scheme; (20,000 acres)

21. Quantum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence within Madhya Pradesh; mostly hilly and forest lands

24. to 27. Not available

28. Main features and purpose of the scheme

Irrigation and power development

BARSIPARA PROJECT

71C.3-G.12-Ma.55

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 12,000 acres

3. **Source of supply**

Pul Nadi near Barsipara/Sabari/**Godavari**

Utilisation upstream : nil

4. **Description of the reservoir or tank**

Live storage	0.60 T.M.C.
Dead storage	0.05 ,,
Carry-over	0.03 ,,
Annual reservoir losses	0.12 ,,
Filling period	Juue to September
Depletion period	July to June
Catchment area	11 square miles
Area submerged	700 acres
Full reservoir level	R.L. 1,055
Minimum pond level	R.L. 1,000

5. **Description of the headworks**

Dam : earthen, 6,000 feet long, 75 feet high, other particulars not available

Spillway : particulars not available

Outlets : particulars not available

6. **Description of the canal**

Barsipara Canal (contour); left bank; 14 miles long; perennial; unlined; capacity **84 cusecs**

7. **(a) Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

G.C.A.	20,000 acres
C.C.A.	12,000 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	500 acres	4.2 percent
Kharif	5,500 ,,	45.8 ,,
Rabi	1,000 ,,	8.3 ,,
Total	**7,000 ,,**	**58.3 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*..........			....*T.M.C.*.....	
June	8.0	12.0	3.3	0.02	0.09
July	18.2	28.5	6.1	0.05	0.22
August	16.7	29.3	8.1	0.06	0.27
September	9.0	20.5	3.2	0.14	0.64
October	4.0	10.2	0.2	0.18	0.80
November	1.2	8.4	Nil	0.03	0.14
December	0.1	1.0	,,	0.02	0.09
January	0.2	1.6	,,	0.03	0.13
February	0.2	1.6	,,	0.03	0.15
March	0.8	3.8	,,	0.02	0.09
April	1.5	4.1	,,	0.03	0.14
May	1.9	6.0	,,	0.03	0.13
Total	**61.8**			**0.64**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy loam and clayey soils

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Kharif*			*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane	*Others*		*Paddy*	*Others*		*Wheat*	*Others*		
0.1	1.3	0.1	84.0	11.7	6.7	1.0	1.9	0.2	7.0

15. (a) Proposed pattern of irrigated cultivation

Perennial			*Kharif*			*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane	*Others*		*Paddy*	*Others*		*Wheat*	*Others*		
5.7	1.4	0.5	71.4	7.2	5.5	8.6	5.7	1.0	7.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
80	136	207	7.8	1.8	0.9	2.1

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Roughly 30 percent will be culturable land

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

GORALI NADI PROJECT

72C.3-G.12-Ma.56

1. **Name of State**	Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 11,900 acres

3. **Source of supply**

Gorali Nadi near Kanji Pani/Sabri (Kolab)/**Godavari**

Utilisation upstream both existing and proposed, minor works only

4. **Description of the reservoir or tank**

Live storage	0.48 T.M.C.
Dead storage	0.03 ,,
Carry-over	Not available
Annual reservoir losses	0.08 T.M.C.
Filling period	July to September
Depletion period	July to June
Catchment area	105 square miles
Area submerged	600 acres
Full reservoir level	R.L. 840
Minimum pond level	R.L. 805

5. **Description of the headworks**

Dam :	800 feet long, 60 feet high, other particulars not available
Spillway:	capacity 42,000 cusecs; other particulars not available
Outlets:	particulars not available

6. **Description of the canals**

Gorali Right Bank Canal (initially contour; then ridge); 6 miles long; perennial; unlined; capacity **35 cusecs**

Gorali Left Bank Canal (contour); 14 miles long; perennial; unlined; capacity **55 cusecs**

7. **(a) Nature of investigations carried out up-to-date**

Field investigations not yet undertaken, present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

	Right Bank Canal	*Left Bank Canal*	*Total*
		thousand acres	
G.C.A.	6.3	10.7	17.0
C.C.A.	4.4	7.5	11.9

10 Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	600 acres	5.0 percent
Kharif	7,000 „	58.8 „
Rabi	5,400 „	45.4 „
Total	**13,000 „**	**109.2 „**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
		inches		*T.M.C.*	
June	7.6	15.0	2.3	0.02	0.09
July	17.3	28.8	6.6	0.06	0.25
August	15.3	22.5	7.7	0.08	0.33
September	9.8	19.3	4.6	0.18	0.77
October	4.3	10.6	0.5	0.22	0.91
November	1.2	5.8	Nil	0.04	0.17
December	0.2	3.6	„	0.14	0.58
January	0.2	0.8	„	0.18	0.75
February	0.1	0.9	„	0.20	0.92
March	0.7	5.3	„	0.16	0.66
April	1.6	7.1	„	0.03	0.13
May	2.1	5.4	0.4	0.03	0.12
Total	**60.4**			**1.34**	

12.—13. Not available

14. Existing pattern of cultivation* in the areas proposed to be irrigated

Kharif			*Rabi*		*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy	*Others*		*Others*		
92.2	4.9	6·8	2.9	0.2	7.0

**based on district statistics*

15. (a) Proposed pattern of irrigated cultivation

Perennial			*Kharif*			*Rabi*				*Grand Total (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Sugarcane	*Others*		*Paddy*	*Others*		*Wheat*	*Paddy*	*Green manure*		
3.9	0.7	0.6	50.1	3.8	7.0	10.8	23.0	7.7	5.4	13.0

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)					*Delta (feet)*					
Perennial	*Kharif*	*Rabi*			*Perennial*	*Kharif*	*Rabi*			*Overall*
Sugarcane	*Paddy*	*Wheat*	*Paddy*	*Green manure*	*Sugarcane*	*Paddy*	*Wheat*	*Paddy*	*Green manure*	
80	136	207	60	227	7.6	1.8	0.9	4.0	0.4	2.3

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence within Madhya Pradesh and forest clad

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

SAILERVAGU PROJECT

73C.3-G.12-Ma.57

1. Name of State Madhya Pradesh

2. Scope of the scheme or system

Irrigation scheme; flow-cum-storage; C.C.A. 19,440 acres

3. Source of supply

Sailervagu near Paita/Sabri/**Godavari**
Utilisation upstream:
existing: nil
proposed: irrigation of 4,000 acres

4. Description of the reservoir or tank (Tentative)

Live storage	1.65 T.M.C.
Dead storage	0.09 ,,
Carry-over	Not available
Annual reservoir losses	0.29 T.M.C.
Filling period	July to September
Depletion period	July to June
Catchment area	42 square miles
Area submerged	2,200 acres
Full reservoir level	R.L. 900
Minimum pond level	R.L. 865

5. Description of the headworks

Dam:	earthen, 2,600 feet long, 65 feet high
Spillway:	capacity 12,600 cusecs, other particulars not available
Outlets :	particulars not available

6. Description of the canals (Tentative)

Sailervagu Left Bank Canal (contour) ; 8.2 miles long ; perennial ; unlined ; capacity **59 cusecs**
Sailervagu Right Bank Canal (contour) ; 19 miles long ; perennial ; unlined ; capacity **143 cusecs**

7.(a) Nature of investigations carried out up-to-date

Field investigations not yet undertaken ; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

	Left Bank Canal	*Right Bank Canal*	*Total*
	thousand acres		
G.C.A.	8.2	19.6	27.8
C.C.A.	5.7	13.7	19.4

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated		*Intensity of irrigation*	
	Left Bank Canal	*Right Bank Canal*	*Left Bank Canal*	*Right Bank Canal*
Perennial	200 acres	600 acres	3.5 percent	4.4 percent
Kharif	4,400 „	10,600 „	77.2 „	77.4 „
Rabi	900 „	2,100 „	15.8 „	15.3 „
Total	**5,500** „	**13,300** „	**96.5** „	**97.1** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*		*Capacity factor*	
	Normal	*Maximum*	*Minimum*	*Left Bank Canal*	*Right Bank Canal*	*Left Bank Canal*	*Right Bank Canal*
1	2	3	4	5	6	7	8
	inches			*T.M.C.*			
June	7.6	15.1	2.3	0.01	0.02	0.07	0.05
July	17.3	28.8	6.6	0.04	0.09	0.25	0.23
August	15.3	22.5	7.7	0.05	0.11	0.32	0.29
September	9.3	19.6	4.6	0.11	0.25	0.72	0.67
October	4.2	10.6	0.3	0.13	0.33	0.82	0.86
November	1.2	5.8	Nil	0.02	0.05	0.13	0.13
December	0.2	3.6	„	0.02	0.04	0.13	0.10
January	0.1	0.8	„	0.02	0.05	0.13	0.13
February	0.1	0.9	„	0.02	0.05	0.14	0.14
March	0.7	5.3	„	0.01	0.03	0.06	0.08
April	1.6	7.1	„	0.01	0.03	0.07	0.08
May	2.1	5.4	„	0.01	0.03	0.06	0.08
Total	**59.7**			**0.45**	**1.08**		
Total diversion for both canals				**1.53**			

12.—13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Kharif			*Rabi*		*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy	*Others*		*Others*		
89.3	8.2	7.8	2.5	0.2	8.0

**based on district statistics*

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane		*Paddy*		*Wheat*		
4.2	0.8	79.8	15.0	16.0	3.0	18.8

(b) Are there any rules for regulating crop pattern? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
80	136	207	7.6	1.8	0.9	1.9

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence within Madhya Pradesh ; most of it is forest land

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture, reclamation of forest and waste lands

ORDELTONG SCHEME

74C.3-G.10-Ma.58

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**
   Irrigation scheme; flow-cum-storage; C.C.A. 5,000 acres

3. **Source of supply**
   Sub-tributory of Sabri near Ordeltong/Sabri/**Godavari**
   Utilisation upstream :
   existing : nil
   proposed: small tanks to irrigate 200 acres

4. **Description of the reservoir or tank**

Live storage	0.35 T.M.C.
Dead storage	0.07 „
Carry-over	Not available
Annual reservoir losses	0.09 T.M.C.
Filling period	June to Sept.
Depletion period	July to Feb.
Catchment area	7 square miles (3.4 square miles to be diverted from panpath weir)
Area submerged	460 acres
Full reservoir level	R.L. 537
Minimum pond level	R.L. 500

5. **Description of the headworks**

Dam :	earthen, 2,500 feet long, 70 feet high
Spillway:	particulars not available
Outlets:	particulars not available

6. **Description of the canal**
   Ordeltong Canal (contour); left bank; 8 miles long; two seasonal; unlined; capacity 54 cusecs

7. (a) **Nature of investigations carried out up-to-date**
   Field investigations not yet undertaken; present proposals based on topo-sheet studies

   (b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

G.C.A.	8,700 acres
C.C.A	5,000 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	4,000 acres	80.0 percent
Rabi	1,000 ,,	20.0 ,,
Total	**5,000 ,,**	**100.0 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*	....		......*T.M.C.*......	
June	6.9	15.6	2.8	Nil	Nil
July	16.7	32.7	4.7	0.04	0.28
August	14.3	25.4	Nil	0.04	0.28
September	8.3	21.2	,,	0.10	0.71
October	3.6	7.5	,,	0.12	0.83
November	1.0	3.3	,,	0.02	0.14
December	0.3	3.9	,,	0.01	0.07
January	Nil	0.2	,,	0.01	0.07
February	0.1	1.2	,,	0.01	0.08
March	0.5	4.7	,,	Nil	Nil
April	1.6	4.2	,,	,,	,,
May	1.4	3.2	,,	,,	,,
Total	**54·7**			**0.35**	

12.—13. Not available

14. Existing pattern of cultivation* in the area proposed to be irrigated

Kharif			*Rabi*		
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Total cropped area (T. acres)*
Paddy	*Others*		*Others*		
89.5	7.9	3.7	2.6	0.1	3.8

**based on district statistics*

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Grand Total (T.acres)*
Paddy		*Wheat*		
80.0	4.0	20.0	1.0	5.0

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)		*Delta (feet)*		
Kharif	*Rabi*	*Kharif*	*Rabi*	*Overall*
136	207	1.8	0.9	1.6

17. Nil

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence within Madhya Pradesh (75 percent forests, rest culturable)

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

JANAVAGU PROJECT

75C.3-G.12-Ma.59

1. **Name of State** Madhya Pradesh

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 27,000 acres

3. **Source of supply**

Janavagu/Sabari/**Godavari**

No existing or proposed utilisation upstream

4. **Description of the reservoir or tank (Tentative)**

Live storage	2.00 T.M.C.
Dead storage	0.10 ,,
Carry-over	Not available
Annual reservoir losses	0.29 T.M.C.
Filling period	June to September
Depletion period	July to June
Catchment area	72.5 square miles
Area submerged	2,100 acres
Full reservoir level	R.L. 350
Minimum pond level	R.L. 300

5. **Description of the headworks**

Dam :	earthen, 7,000 feet long, 90 feet high, other particulars not available
Spillway :	particulars not available
Outlets :	particulars not available

6. **Description of the canals**

Janavagu Right Bank Canal (contour); 12 miles long; perennial; unlined; capacity **105 cusecs**

Janavagu Left Bank Canal (contour); 14 miles long; perennial; unlined, capacity **160 cusecs**

7. **(a) Nature of investigations carried out up-to-date**

Proposal based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bastar

Item	*Right Bank Canal*	*Left Bank Canal*	*Total*
	................*thousand*	*acres*...........................	
G.C.A.	16.6	22.0	38.6
C.C.A.	11.6	15.4	27.0

10. Area proposed to be irrigated annually and intensity of irrigation (both canals)

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	2,000 acres	7.4 percent
Kharif	18,800 ,,	69.6 ,,
Rabi	10,700 ,,	39.6 ,,
Total	**31,500** ,,	**116.6** ,,

11. Normal rainfall and river supply proposed to be diverted (both canals)

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	......*inches*	....		......*T.M.C.*......	
June	6.9	15.6	2.8	0.08	0.12
July	16.6	32.7	4.7	0.16	0.23
August	14.3	25.4	Nil	0.20	0.28
September	8.3	21.2	,,	0.49	0.71
October	3.6	7.5	,,	0.61	0.86
November	1.0	3.3	,,	0.12	0.17
December	0.3	3.9	,,	0.30	0.42
January	0.1	0.2	,,	0.39	0.55
February	0.1	0.2	,,	0.43	0.67
March	0.5	4.7	,,	0.38	0.54
April	1.6	4.2	,,	0.12	0.17
May	1.4	3.2	,,	0.12	0.17
Total	**54.7**			**3.40**	

12.—13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Kharif			*Rabi*		
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Total cropped area (T. acres)*
Paddy	*Others*		*Others*		
89.1	8.2	7.3	2.7	0.2	7.5

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*				
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T.acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Grand Total (T. acres)*
Sugarcane		*Paddy*		*Wheat*	*Paddy*	*Green manure*		
6.4	2.0	59.6	18.8	11.7	19.1	3.2	10.7	31.5

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)					*Delta (feet)*					
Perennial	*Kharif*	*Rabi*			*Perennial*	*Kharif*	*Rabi*			*Overall*
Sugarcane	*Paddy*	*Wheat*	*Paddy*	*Green manure*	*Sugarcane*	*Paddy*	*Wheat*	*Paddy*	*Green manure*	
80	136	207	60	227	7.6	1.2	0.9	4.0	0.4	2.5

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence within Madhya Pradesh, 80 percent is forest clad

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture and reclamation of forest lands

UPPER GODAVARI PROJECT

76C.3-G.1-M.1

1. **Name of State** Maharashtra (formerly partly in Bombay and partly in Hyderabad)

2. **Scope of the scheme or system**

   Multi-purpose scheme; flow-cum-storage; irrrigation additional C.C.A. 157,000 acres; power 5,000 kW. installed

3. **Source of supply**

   Darna at Nandgaon (Lake Beale)/**Godavari**
   Godavari at Nandur-Madhmeshwar
   Aundha nalla at Mukne/Darna/**Godavari**
   Shivna at Khadakwagalgaon/**Godavari**
   and 1.3 T.M.C. from Gangapur storage on **Godavari**
   Considerable utilisation upstream, both existing and proposed

4. **Description of the dam and the reservoir or tank**

	Raising of Lake Beal on Darna*	Mukne on Aundha nalla	Nandur—madhmeshwer on Godavari*	Khadakwagal gaon on Shivna
Live storage (T.M.C.)	19.80	3.60	2.80	—
Dead storage „	0.30	0.30	0.20	0.10
Carry-over „	4.70	0.90	0.60	Nil
Annual reservoir losses (T.M.C.)	3.00	0.50	0.70	„
Filling period	............June to October..................			
Depletion period	..........June to May			
Catchment area (square miles)	156	52	1,650	757
Area submerged (acres)	16,900	4,800	8,300	700
Full reservoir level (R.L.)	1,899	1,938	541	1,607
Minimum pond level (R.L.)	1,843	1,897	515	1,645

**Existing works to be remodelled to the data shown above*

	Lake Beal on Darna	Mukne on Aundha nalla
Dam :	masonry, 5,360 feet long, with earthen flanks, 109 feet high	masonry with earthen flanks, 51 feet high, length 3,500 feet
Spillway:	gated spillway, 380 feet long, capacity 71,250 cusecs	ungated spillway, 200 feet long, capacity 37,000 cusecs
Outlets :	(i) river sluices, 2 number, 10 feet x 6 feet each and 2 number, 16 feet x 6 feet each (ii) scouring sluices, 6 number, 10 feet x 6 feet each (iii) turbine sluices, 2 number, 10 feet x 6 feet to be abandaned	river sluices capacity 120 cusecs

5. Description of the head works

Nandur-Madhmeshwar weir on Godavari	Khadakwagal gaon weir on Shivana
installing 4 feet shutters on existing weir	masonry, with earthen flanks, 2,700 feet long, 15 feet high ungated weir, 650 feet long, capacity 192,000 cusecs head regulator on left flank, capacity 300 cusecs

6. Description of the canals

Existing canals to be remodelled to the following data :

(i) Godavari Left Bank Canal (contour); 136 miles long; perennial; lined; capacity **1,500 cusecs**

(ii) Godavari Right Bank Canal (contour); 69 miles long; perennial; lined; capacity **900 cusecs**

7. (a) Nature of investigations. carried out upto-date

Investigation in progress

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

	Godavari Right Bank Canal		*Godavari Left Bank Canal*			*Total*
	Nasik	*Ahmednagar*	*Nasik*	*Ahmednagar*	*Aurangabad*	
			thousand acres			
G.C.A.	13.5	130.8	20.7	74.0	205.3	437.7
C.C.A.	12.7	123.3	19.4	63.6	157.0	376.0
Deduct C.C.A. under 16A-G.1—M.1	12.7	123.3	19.4	63.6	—	219.0
Additional C.C.A.	—	—	—	—	157.0	157.0

10. Area proposed to be irrigated annually and intensity of irrigation (both canals)

	Area proposed to be irrigated		*Intensity of irrigation*	
	Alternative I	*Alternative II*	*Alternative I*	*Alternative II*
	.... *thousand acres*		.... *percentage*	
Perennial	52.0	44.8	13.8	11.9
Long staple cotton	57.4	56.0	15.3	14.9
Kharif	21.3	42.0	5.7	11.2
Rabi	121.7	137.2	32.4	36.5
Hot weather	7.6	—	2.0	—
Total	**260.0**	**280.0**	**69.2**	**74.5**
Deduct existing irrigation	57.4	57.4		
Additional irrigation	202.6	222.6		

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			
	Normal		*Maximum*	*Minimum*
	Left Bank Canal	*Right Bank Canal*		
1	2	3	4	5
	..................*inches*..................................			
June	4.6	4.0	10.2	0.3
July	4.5	3.5	11.4	0.2
August	3.5	3.0	11.8	0.3
September	5.7	5.5	14.0	Nil
October	1.9	2.2	16.8	,,
November	1.1	1.0	8.9	,,
December	0.3	0.2	2.8	,,
January	0.1	0.2	2.7	,,
February	0.2	0.1	1.8	,,
March	0.1	0.1	1.2	,,
April	0.2	0.2	2.0	,,
May	0.7	0.7	4.0	,,
Total	**22.9**	**20.7**		

continued below

continued from above	*River supply proposed to be diverted*				*Capacity factor*			
	Alternative I		*Alternative II*		*Alternative I*		*Alternative II*	
	Left Bakn Canal	*Right Bank Canal*	*Left Bank Canal*	*Right Bank Canal*	*Left Bank Canal*	*Right Bank Canal*	*Left Bank Canal*	*Right Bank Canal*
	6	7	8	9	10	11	12	13
	..........................*T.M.C.*..................................							
	15th June to 14th October							
	9.50	5.50	9.60	5.00	0.60	0.58	0.62	0.53
	15th October to 14th February							
	7.00*	3.50*	7.60	4.00	0.44	0.37	0.48	0.42
	15th February to 14th June							
	8.10*	5.20*	8.30	4.30	0.52	0.56	0.32	0.45
Total	**24.60**	**14.20**	**25.50**	**13.30**				
	38.80		**38.80**					

Total for both canals

Existing diversion	12.2 T.M.C.
Additional diversion	26.6 ,,

12. Not available

13. (a) Characteristics of soils in the commanded area

	Right Bank Canal	Left Bank Canal
Sandy to sandy loam	21 percent	10 percent
Silty loam to clay loam	25 ,,	40 ,,
Clay loam to clay	54 ,,	50 ,,

A soil depth of more than 18 inches is available in 80 percent of the command and between 9 inches and 18 inches in the remaining area

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*		*Kharif*					
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*					*Total area (T. acres)*
Sugarcane	*Others*		*Others*		*Paddy*	*Bajri*	*Groundnut*	*Pulses*	*Others*	
5.0	0.5	20.5	4.1	15.3	0.3	28.4	6.5	7.8	4.8	179.0

continued below

continued from above

Rabi			*Miscellaneous*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Perecentage of principal crops*		*Total area (T. acres)*	
Wheat	*Others*		*Cotton*	*Fodder*		
10.6	27.5	142.5	3.0	2.0	18.8	376.1

15. (a) Proposed pattern of irrigated cultivation

Perennial			*Cotton*		*Kharif*		*Rabi*		*Hotweather*		
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Grand Total (T. acres)*
Sugarcane	*Others*		*Long staple cotton*		*Groundnut*		*Jowar*		*Fodder*		
Alternative I											
15.0	5.0	52.0	22.1	57.4	8.2	21.3	46.8	121.7	2.9	7.6	260.0
Alternative II											
11.0	5.0	44.8	20.0	56.0	15.0	42.0	49.0	137.2	—	—	280.0

continued below
continued from above

(b) **Are there any rules for regulating crop pattern ?**

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)			*Delta (feet)*			
	Kharif	*Rabi*	*Hotweather*	*Kharif*	*Rabi*	*Hotweather*	*Total*
Sugarcane	65	70	50	3.8	3.5	4.8	12.1
Other perennial	100	100	75	2.4	2.4	3.2	8.0
Long staple cotton	200	400	100	1.2	0.6	2.4	4.2
Kharif (Groundnut)	200	—	—	1.2	—	—	1.2
Rabi (Jowar)	—	200	—	—	1.2	—	1.2
Hot weather	—	—	100	—	—	2.4	2.4

Overall delta at canal head	Alternative I	4.4 feet
	Alternative II	2.3 ,,

17. (a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

Nil

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

About 3,000 wells; irrigating about 2 acres each; area under wells is included in the C.C.A.

18. **Quantum of river supplies available in relation to withdrawals**

Adequate supplies are available in the river to meet project requirements but this adequacy would also be governed by the requirements of an integrated basin-wide plan

POWER ASPECTS

19. **River supply proposed to be diverted and operation head**

Darna dam Power House

Range of operation head	Supply passing through turbines
Constant 60 feet	Constant 600 cusecs 18.92 T.M.C. annually

20. **Proposed disposal of tail-race waters**

The tail-race waters will be let into the river

21. **Quantum of river supplies available in relation to withdrawals**

As per item 18 above

GENERAL

22. **Aspects other than irrigation and power ; water supply (month-wise), if any, required for these aspects; financial returns**

Nil

23. Extent and type of area submerged by reservoir

Area submerged in acres

	Lake Beale on Darna (Nandgaon)	*Mukhne on Aundha nalla*	*Nandur-Madhmeshwar on Godavari*	*Khadakwagalgaon on Shivna*	*Total*
Culturable	11,400	3,000	1,300/5,800*	500	16,200
Forest	3,000	1,000	— —	Nil	4,000
Waste	2,500	800	1,000/2,500*	200	4,500
Total	16,900	4,800	2,300/8,300*	700	24,700

**Temporary submergence from 15th June to end of October only. Tank bed will be sown with Rabi crops*

Entire submergence lieds in Maharashtra

24. to 27. Not available

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture—Power generation

JAYAKWADI PROJECT (Final stage) 77C.3-G.1-M.2

1. **Name of State** Maharashtra (formerly in Hyderabad)
2. **Scope of the scheme or system**
   Irrigation, flow-cum-storage, additional C.C.A. 552,900 acres
3. **Source of supply**
   Sindphana at Majalgaon/**Godavari**
   Godavari at Paithan; and
   Godavari at Nimba
   Utilisation upstream of Majalgaon minor scheme only but considerable utilisation upstream of Paithan
4. **Description of the reservoir or tank**

	Godavari at Paithan	*Godavari at Nimba*
Live storage (T.M.C.)	17.00	6.30
Dead storage (T.M.C.)	—	3.20
Carry-over (T.M.C.)	—	1.90
Annual reservoir losses (T.M.C.)	4.30	2.30
Filling period	15th June to end of Oct.	
Depletion period	15th June to 14th June	
Catchment area (square miles)	8,407	11,830
Area submerged (acres)	.29,670	12,700
Full reservoir level (R.L.)	1,489	1,298
Minimum pond level (R.L.)	1,448	1,290

5. **Description of the head-works**

Sindphana at Majalgaon	*Godavari at Paithan*	*Godavari at Nimba*
Same as I8C.2-G.1-M.8	Dam : earthen flanks on both sides with masonry, central spillway 10,500 feet long 45 feet high	Masonry weir 5,500 feet long, crest 35 feet above lowest river bed, capacity 763,000 cusecs
	Spillway : masonry gated, 700 feet long, capacity 641, 900 cusees	Head regulator in right flank, capacity 2,270 cusecs
	Outlets : head regulator in left flank, capacity 4,920 cusecs	

6. Description of the canals

Majalgaon canal	*Paithan canal*	*Nimba canal*
remodelling and extension of the canal to mile 35; unlined; two seasonal; authorised capacity **1,560 cusecs**	contour; 130 miles long; two seasonal; unlined; authorised; capacity **4,920 cusecs**	contour; 32 miles long; perennial; unlined; authorised capacity **2,270 cusecs**

7. (a) Nature of investigations carried out up-to-date

Preliminary investigations in progress

(b) Actual or probable date of beginning of construction

IV Plan

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

		Names of districts				*Total*	
		Aurangabad	*Bhiar*	*Parbhani*	*Nanded*	G.C.A.	C.C.A.
				thousand acres			
Majalgaon Canal	G.C.A.	—	81.3	38.0	—	119.3	—
	C.C.A.	—	73.2	34.2	—	—	107.4
Paithan Canal	G.C.A.	156.4	—	273.6	—	430.0	—
	C.C.A.	140.8	—	249.2	—	—	390.0
Nimba Canal	G.C.A.	—	3.4	89.3	43.1	135.8	—
	C.C.A.	—	3.1	82.3	39.6	—	125.0
				Total		685.1	622.4
		Deduct area irrigated under wells					6.6
							615.8
		Deduct C.C.A. under Stage I, **18C.2-G.1-M.8**					62.9
				Net C.C.A.			552.9

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated			Intensity of irrigation		
	Majalgoan Canal	*Paithan Canal*	*Nimba Canal*	*Majalgaon Canal*	*Paithan Canal*	*Nimba Canal*
	........*thousand acres*........			........*percentage*..........		
Long staple cotton	—	—	61.5	—	—	49.2
Kharif	107.4	266.0	60.0	100.0	68.2	48.0
Rabi	30.0	80.0	60.0	27.9	20.5	48.0
Total	**137.4**	**346.0**	**181.5**	**127.9**	**88.7**	**145.2**

Total irrigation on all canals	664.9
Deduct area proposed to be irrigated in Stage I/ **18C.2-G.1-M.8**	44.6
Additional irrigation	620.3

11. Normal rainfall and river supply proposed to be diverted

Majalgaon canal

Month	Rainfall			River supply proposed to be diverted	Capacity factor
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	......*inches*..........			......*T.M.C.*......	
June	5.5	10.7	Nil	15th June to 14th Oct.	
July	6.5	11.4	,,	7.25	0.44
August	5.5	9.5	0.3		
September	7.5	13.6	Nil		
October	1.8	7.6	,,	15th Oct. to 14th Feb.	
November	0.9	10.5	,,	1.74	0.10
December	0.3	1.6	,,		
January	0.3	2.5	,,		
February	0.2	1.0	,,	15th Feb. to 14th June	
March	0.2	1.1	,,	Nil	
April	0.5	9.0	,,		
May	0.6	5.3	,,		
Total	**29.8**			**8.99**	

(ii)—Paithan Canal

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*..........			......*T.M.C.*......	
June	5.5	17.3	0.7		
July	5.5	16.7	0.6	15th June to 14th Oct.	
August	5.5	14.5	0.4	27.20	0.52
September	7.5	16.8	Nil		
October	1.8	7.9	„		
November	0.9	8.8	„	15th Oct. to 14th Feb.	
December	0.3	4.1	„	6.76	0.13
January	0.2	2.7	„		
February	0.2	3.7	„		
March	0.2	1.2	„	15 Feb. to 14th June	
April	0.5	2.9	„	Nil	—
May	0.4	4.2	„		
Total	**28.5**			**33.96**	

(iii) Nimba Canal

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*..............			......*T.M.C.*.......	
June	6.0	27.4	1.1	15th June to 14th Oct.	
July	7.0	15.8	0.6	10.29	0.43
August	6.0	20.2	0.5		
September	8.0	12.7	0.5		
October	1.5	4.9	Nil	15th Oct. to 14th Feb.	
November	0.8	4.1	,,		
December	0.4	2.0	,,	3.82	0.16
January	0.3	2.5	,,		
February	0.2	3.9	,,		
March	0.2	1.4	,,	15th Feb. to 14th June	
April	0.5	2.1	,,	7.64	0.32
May	0.6	3.8	,,		
Total	**31.5**			**21.75**	
Total for all canals				64.70	
Deduct diversion proposed in Stage I				8.90	
Additional diversion				**55.80**	

12. Not available

13. **(a) Characteristics of soils in the commanded area**

Sandy to sandy loam 10 percent; silty loam to clay loam 30 percent; and clay loam to clay 60 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

	Perennial			Two seasonal		
	Percentage of principal crops		Total area (T. acres)	Percentage of principal crops		Total area (T.acres)
	Sugarcane	Others		Cotton	Others	
Majalgaon Canal	0.1	0.1	0.2	15.3	0.5	17.0
Paithan Canal	0.1	0.3	1.5	19.1	0.8	77.5
Nimba Canal	0.3	0.2	0.6	18.3	0.3	23.3

continuea below

conti-nued from above

	Kharif						Rabi					Total cropped area (T. acres)
	Percentage of principal crops					Total area (T. acres)	Percentage of principal crops				Total area (T. acres)	
	Paddy	Jowar	Groundnut	Pulses	Others		Wheat	Jowar	Gram	Others		
Majlgaon Canal	0.3	7.3	9.8	10.4	8.0	38.5	3.5	35.0	3.3	6.3	51.7	107.4
Paithan Canal	0.5	3.5	6.4	12.5	8.1	121.0	4.2	34.0	3.0	7.5	190.0	390.0
Nimba Canal	1.8	12.9	5.3	14.6	3.8	48.0	4.5	28.6	5.8	3.6	53.1	125.0

15. (a) Proposed pattern of irrigated cultivation

	Long staple cotton		Kharif			Rabi		Grand Total (T.acres)
	Percentage of principal crops	Total area (T. acres)	Percentage of principal crops		Total area (T. acres)	Percentage of principal crops	Total area (T. acres)	
	Cotton		Paddy	Others		Gram		
Majalgaon Canal	—	—	21.8	56.4	107.4	21.8	30.0	137.4
Paithan Canal	—	—	36.9	40.0	266.0	23.1	80.0	346.0
Nimba Canal	33.8	61.5	33.1	—	60.0	33.1	60.0	181.5

(b) Are there any rules for regulating crop pattern?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)			*Delta (feet)*			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Majalgaon Canal							
Paddy	80	400	—	3.0	0.6	—	3.6
Other Kharif	300	—	—	0.8	—	—	0.8
Paithan Canal							
Paddy	80	400	—	3.0	0.6	—	3.6
Other Kharif	250	—	—	1.0	—	—	1.0
Nimba Canal							
Long staple cotton	300	—	100	0.8	—	2.4	3.2
	100	400	—	2.4	0.6	—	3.0
All canal Gram	—	400	—	—	0.6	—	0.6

Overall Delta at canal head:		
	Majalgaon canal	1.5 feet
	Paithan canal	2.5 ,,
	Nimba canal	2.5 ,,

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

About 3,305 wells capable of irrigating about 6,600 acres of seasonal crops; area under wells excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

	Paithan reservoir	*Nimba reservoir*
Culturable	26,700	11,400
Waste land	2,970	1,300
Total	**29,670**	**12,700**

All submergence in Maharashtra

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

KARANJWAN PROJECT (Final stage)

78C.3-G.1-M.3

1. **Name of State** Maharashtra (formerly in Bombay)

2. **Scope of the scheme or system**

Irrigation scheme ; flow-cum-storage ; additional C.C.A. nil

3. **Source of supply**

Kadwa at Karanjwan/**Godavari**
Kadwa at Palkhed/**Godavari**
Utilisation upstream : 1.4 T.M.C. by Kadwa river works (*vide* 17A-G.1-M.2)

4. **Description of the reservoir or tank**

	Kadwa at Karanjwan	*Kadwa at Palkhed*
Live storage (T.M.C.)	Same as per	6.80
Dead storage „	Project No.	0.27
Carry-over „	**17C.2-**	2.30
Annual reservoir losses (T.M.C.)	**G.1-M.7**	—
Filling period		15th June to Sep.
Depletion period		15th June to 14th June
Catchment area square miles		314
Area submerged (acres)		4,050 acres
Full reservoir level R.L.		1,982
Minimum pond level R.L.		1,910

5. **Description of the headworks**

Dam : masonry with earthen flanks; 92 feet high
Spillway : capacity 124,000 cusecs
Outlets : head regulators, capacity 970 cusecs and 155 cusecs on left and right flanks respectively

6. **Description of the canals**

Palkhed Left Bank Canal : same as 17C.2-G.1-M.7
Palkhed Right Bank Canal (contour); 25 miles long; unlined; capacity **155 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Investigations in progress

(b) **Actual or probable date of beginning of construction** IV Plan

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

G.C.A.
C.C.A. } Same as per project No. **17C.2-G.1-M,7**

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated			*Intensity of irrigation*
	Palkhed			
	Left Bank Canal	*Right Bank Canal*	*Total*	*(both canals)*
Perennial	6,000	1,060	7,100	4.2 percent
Two seasonal	14,600	2,600	17,200	10.3
Long staple cotton	6,800	1,200	8,000	4.8
Kharif	43,000	7,800	50,800	29.3
Rabi	40,500	7,300	47,800	28.3
Total	**110,900**	**19,960**	**130,900**	**77.4**
Deduct additional area proposed to be irrigated under **17C.2-G.1-M.7**			110,900	—
Deduct existing irrigation under **17A-G.1-M.2**			—	2.3
Additional irrigation			—	17.6 acres

11. Normal rainfall and river supply proposed to be diverted

Month	Rainfall		
	Normal	Maximum	Minimum
1	2	3	4
	..................inches	....	....
June	4.2	8.8	0.1
July	4.6	10.5	1.2
August	3.3	7.0	0.4
September	5.6	11.7	0.1
October	2.2	8.3	Nil
November	0.9	0.1	,,
December	0.2	1.4	,,
January	0.1	2.9	,,
February	0.1	10.3	,,
March	0.1	2.0	,,
April	0.1	5.3	,,
May	0.8	3.1	,,
Total	**22.2**		

continued below

continued from above

River supply proposed to be diverted		Capacity factor	
Left Bank Canal	Right Bank Canal	Left Bank Canal	Right Bank Canal
................T.M.C.	....		
15th June to 14th Oct.			
5.70	0.90	0.50	0.60
15th Oct. to 14th Feb.			
5.30	0.90	0.50	0.50
15th Feb. to 14th June			
2.20	0.30	0.20	0.20
13.20	2.10		

Total for both canals	**15.30**
Deduct proposed irrigation as per project No. **17C.2-G.1-M.7**	**14.40**
Deduct existing diversion on **17A-G.1-M.2**	0.72
Net additional diversion	0.18

12.-13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*		*Kharif*					*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane	*Others*		*Others*		*Paddy*	*Bajri*	*Groundnut*	*Others*		*Wheat*	*Others*		
1.8	7.8	16.0	5.4	9.0	0.9	36.8	7.0	7.4	87.0	24.9	8.0	55.0	167.0

15. (a) Proposed pattern of irrigated cultivation

Perennial			*Two seasonal*		*Kharif*			*Rabi*		*Long staple cotton*		*Grand Total (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Plantain	*Others*		*Others*		*Groundnut*	*Others*		*Jowar*		*Others*		
3.6	1.8	7.1	13.2	17.2	14.1	15.2	50.8	36.5	47.8	6.1	7.9	130.8

(b) Are there any rules for regulating crop pattern?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (*acres per mean cusec*)			Delta (*feet*)			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Plantain/ sugarcane	65	70	50	3.7	3.6	4.8	12.1
Other perennial	100	100	75	2.4	2.4	3.3	8.1
Groundnut	200	—	—	1.2	—	—	1.2
Kharif seasonal	200	—	—	1.2	—	—	1.2
Rabi Jowar	—	200	—	—	1.2	—	1.2
Two seasonal	130	140	—	1.8	1.8	—	3.6
cotton Long staple	200	400	100	1.2	0.6	2.4	4.2

Overall delta at canal head 2.8 feet

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

500 wells, irrigating about 2 acres each, area included in the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

Based on gauging for 1906-26, river supply will be adequate for requirements of both the canals in 14 years out of 20 years

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Culturable	3,500	*acres*
Waste	500	,,
Total	**4,050**	,,

Entire submergence lies in Maharashtra

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

BHARVIR PROJECT (DHARNA RIGHT BANK PROJECT) 79C.3-G.1-M.4

1. **Name of State** Maharashtra (formerly in Bombay)

2. **Scope of the scheme or system**

Irrigation scheme ; flow-cum-storage ; C.C.A. 43,600 acres

3. **Source of supply**

Karva at Bharvir Budruk/Darna/**Godavari**

Utilisation upstream : nil

4. **Description of the reservoir or tank**

Live storage	1.85 T.M.C.
Dead storage	0.19 „
Carry-over	0.20 „
Annual reservoir losses	0.29 „
Filling period	15th June to 30th Sep.
Depletion period	15th June to 14th June
Catchment area	56.5 square miles
Area submerged	1,440 acres
Full reservoir level	R.L. 2,002
Minimum pond level	R.L. 1,954

5. **Description of the headwork**

Dam : masonry with earthen flanks; 2,850 feet long, 125 feet high
Spillway : masonry; ungated, 450 feet long; capacity 50,900 cusecs
Outlets : canal head regulator on right flank; capacity 200 cusecs

6. **Description of the canal**

Karva Canal (contour); right bank; 43 miles long; perennial; unlined; capacity **200 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Detailed surveys in progress

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Nasik	
G.C.A.	66,300 acres
C.C.A.	46,400 „
Deduct area under well irrigation	2,800 „
Net C.C.A.	43,600 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	1,400 acres	3.2 percent
Two seasonal	3,000 „	6.9 „
Long staple cotton	2,200 „	5.0 „
Kharif	6,600 „	15.1 „
Rabi	14,000 „	32.1 „
Total	**27,200** „	**62.3** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*............			.....*T.M.C.*.........	
June	4.0	8.0	0.3		
July	5.2	12.5	0.3	15th June to 14th Oct.	
August	3.7	22.4	0.6	1.27	0.60
September	5.5	15.5	Nil		
October	2.6	15.2	„		
November	0.9	7.6	„	15th Oct. to 14th Feb.	
December	0.2	1.5	„	1.03	0.48
January	0·1	2.2	„		
February	Nil	0.9	„	15th Feb. to 14th June	
March	0.1	1.2	„	0.57	0.27
April	0.3	1.9	„		
May	0.8	3.7	„		
Total	**23.4**			**2.87**	

12. Not available

13. **(a) Characteristics of soils in the commanded area**

Shallow black soil on Murrum

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. **Existing pattern of cultivation in the area proposed to be irrigated**

Perennial			*Two seasonal*		*Kharif*						*Rabi*				*Hot weather*		*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*					*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane	*Others*		*Chillies, pulses etc.*		*Paddy*	*Pulses*	*Groundnut*	*Bajri*	*Others*		*Wheat*	*Jowar*	*Gram*		*Rice & fodder*		
0.9	0.4	0.61	4.4	2.04	2.9	8.1	5.7	38.2	3.6	27.14	19.4	5.3	3.1	12.9	8.0	3.71	46.4

15. **(a) Proposed pattern of irrigated cultivation**

Perennial			*Two seasonal*		*Kharif*			*Rabi*		*Long staple cotton*		*Grand total (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane	*Others*		*Others*		*Jowar*	*Groundnut*		*Jowar*		*Cotton*		
3.4	1.7	1.4	11.0	3.0	24.2	17.1	11.2	34.6	9.4	8.1	2.2	27.2

(b) Are there any rules for regulating crop pattern ?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (*acres per mean cusec*)			*Delta* (*feet*)			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Sugarcane/plantains	65	70	100	3.8	3.5	4.8	12.1
Other perennial	100	100	75	2.4	2.4	3.2	8.0
Two seasonal	130	140	—	1.9	1.7	—	3.6
Kharif (seasonal)	200	—	—	1.2	—	—	1.2
Rabi (Jowar)	—	200	—	—	1.2	—	1.2
Long staple cotton	200	400	100	1.2	0.6	2.4	4.2
Overall delta at canal head					2.4 feet		

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

About 1,400 wells can irrigate about 2 to 3 acres per well, area excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supplies are adequate for project requirements based on river supplies at Pimpalgaon Dukra Supply available for 14 years out of 19 years.

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

The entire submergence would be in Maharashtra (culturable 740 acres, forest 300 acres and waste land 400 acres)

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

PRAVARA RIVER PROJECT **80C.3-G.2-M.5**

1. **Name of State** Maharashtra (formerly in Bombay)

2. **Scope of the scheme or system**

Multi-purpose scheme; flow-cum-storage; irrigation; additional C.C.A. 104,000 acres; power, 26,950 kW. installed.

3. **Source of supply**

Pravara at Kanariwadi/Bhandardara/Mahaldevi/Ozar/**Godavari**
Utilisation upstream : nil

4. **Description of the reservoir or tank**

	Kanariwadi dam	*Mahaldevi dam*	*Bhandardara dam*
Live storage (T.M.C.)	2.00	4.50	as under
Dead storage ,,	0.10	1.00	**18.A-G.2-M.3**
Carry-over ,,	0.70	1.40	
Annual reservoir losses (T.M.C.)	0.10	0.90	
Filling period	15th June to end of Sept.		
Depletion period	15th June to 14th June		
Catchment area (square miles)	6.0	138	
Area submerged (acres)	980	32,00	
Full reservoir level R.L.	2,550	2,025	
Minimum pond level R.L.	2,450	1,960	

5. **Description of the headworks**

		Kanariwadi dam	*Mahaldevi dam*
Dam	:	masonry, 2,500 feet long, 120 feet high	masonry, 3,800 feet long, 130 feet high
Spillway	:	ogee, right flank, capacity 17,600 cusecs	ogee weir, left flank, capacity 82,300 cusecs
Outlets	:	sluices, two number, 15 inches diameter, capacity 600 cusecs each	sluices, two number, 24 inches diameter, capacity 744 cusecs each River sluices, total capacity 600 cusecs

Ozar weir as in **18.A-G.2-M.3**

6. **Description of the canals**

Mahaldevi Left Bank Canal (contour); 70 miles long; perennial; unlined; authorised capacity **744 cusecs**

Pravara Right Bank Canal as under **18.A-G.2-M.3**

Pravara Left Bank Canal as under **18.A-G.2-M.3** except that its capacity will be increased from **530 to 550 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Investigations in progress

(b) **Actual or probable date of beginning of construction** IV Plan

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

District Ahmednagar

	Mahaldevi Left Bank Canal	*Pravara Right Bank Canal**	*Pravara Left Bank Canal*	*Total*
	..........*thousand acres*..........			
G.C.A.	144.0	40.80	125.0	309.8
C.C.A.	117.1	30.60	99.0	246.7
Deduct existing C.C.A. of Pravara Left Bank Canal and Right Bank Canal				126.6
Deduct area under well irrigation under Mahaldevi Canal				13.1
Additional **C.C.A.**				107.0

*C.C.A. under **18.A-G.2-M.3** are reduced by C.C.A. transferred to Mula Left Bank Canal **(6C.1-G.2-M.1)**

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated			
	Mahaldevi Left Bank Canal	*Pravara Left Bank Canal*	*Pravara Right Bank Canal*	*Intensity of Irrigation (for all canals)*
	……………………thousand acres		………………………	……percentage………
Perennial	13.0	11.2	3.2	11.1
Long staple cotton	15.4	13.1	3.8	13.1
Kharif	17.1	14.5	4.2	14.5
Rabi	39.7	34.0	9.7	33.8
Hot weather	3.8	3.3	0.9	3.2
Total	**89.0**	**76.1**	**21.8**	**75.8**
Total of all Canals			186.9	
Deduct area irrigated by Pravara Canals			43.7	
Additional irrigation			143.2	

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall (Mahaldevi Left Bank Canal)*			*River supply proposed to be diverted*		
	Normal	*Maximum*	*Minimum*	*Pravara Right Bank Canal*	*Pravara Left Bank Canal*	*Mahaldevi Left Bank Canal*
1	2	3	4	5	6	7
	........*inches*......			........*T.M.C.*..............		
June	4.0	13.2	Nil			
July	4.0	16.0	0.3	15th June to 14th October		
August	5.0	8.4	0.2	1.13	3.93	4.57
September	5.0	16.1	0.1			
October	2.3	11.2	Nil			
November	1.0	9.0	,,	15th October to 14th February		
December	0.2	1.7	,,	0.83	2.88	3.55
January	0.1	4.0	,,			
February	0.4	0.6	,,			
March	0.1	1.3	,,	15th February to 14th June		
April	0.3	1.7	,,	0.89	3.36	3.93
May	0.8	6.0	,,			
Total	**23.2**			**2.85**	**10.17**	**12.05**

continued below

continued from above

Capacity factor		
Pravara Right Bank Canal	*Pravara Left Bank Canal*	*Mahaldevi Left Bank Canal*
........15th June to 14th Oct.........		
0.71	0.68	0.58
		15th Oct. to 14th Feb.
0.51	0.49	0.45
		15th Feb. to 14 June
0.56	0.59	0.51

Total for all Canals	25.07
Deduct existing diversion under Pravara Canal	15.60
Additional diversion	9.47

Note:— Rainfall figures for Pravara Left and Right Bank Canals are the same as for Pravara Canals proforma (18.A-G.2-M.3) and therefore are not repeated here

12. Not available

13. (a) Characteristics of soils in the commanded area

Mahaldevi Left Bank Canal

Sandy to sandy loam 45 percent, silty loam to clayey loam 35 percent and clayey loam to clay 20 percent for other canals see **18.A-G.2-M.3**

A soil depth of more than 18 inches is available in 70 percent of the area and between 9 inches to 18 inches in the remaining 30 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*			*Kharif*			
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*
Sugarcane	*Others*		*Cotton*	*Others*		*Paddy*	*Bajra*	*Others*	
11.6	1.6	32.1	1.9	1.5	8.2	0.4	46.4	14.1	147.9

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Rabi				*Hot weather*		*Total cropped area (T. acres)*
Percentage of principal crops			*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Jowar	*Wheat*	*Others*		*Others*		
15.6	2.7	0.5	45.7	3.7	9.1	243.0

15.(a) Proposed pattern of irrigated cultivation

	Perennial			*Long staple cotton*		*Kharif*	
	Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*
	Sugarcane	*Others*		*Cotton*		*Others*	
Pravara Right Bank Canal	10.7	4.0	3.2	17.4	3.8	19.3	4.2
Pravara Left Bank Canal	10.7	4.0	11.2	17.2	13.1	19.1	14.5
Mahaldevi Left Bank Canal	10.7	3.9	13.0	17.3	15.4	19.2	17.1

continued below

continued from above

	Rabi		*Hot weather*		*Grand Total (T. acres)*
	Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
	Jowar		*Others*		
Pravara Right Bank Canal	44.5	9.7	4.1	0.9	21.8
Pravara Left Bank Canal	44.7	34.0	4.3	3.3	76.1
Mohaldevi Left Bank Canal	44.6	39.7	4.3	3.8	89.0
Total					**186.9**

(b) Are there any rules for regulating crop pattern?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (*acres per mean cusec*)			*Delta* (*feet*)			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Perennial	For 20 percent perennial area receiving canal water all the year round						
Sugarcane/plantains	65	70	50	3.8	3.5	5.6	12.9
Other perennial	100	100	75	2.4	2.4	3.7	8.5
	Remaining 80 percent area will not receive canal water for six months *i.e.* 15th October to 14th June						
Sugarcane/plantains	65	—	100	4.4	—	2.4	6.8
Other perennial	100	—	150	2.4	—	1.6	4.0
Kharif	200	—	—	1.2	—	—	1.2
Rabi	—	200	—	—	1.2	—	1.2
Long staple cotton	200	400	100	1.2	0.5	2.4	4.1
Hot weather	—	—	100	—	—	2.4	2.4
Overall delta at canal head						3.1 feet	

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

90 wells; area excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

Project requirements are available only in 8 years out of 20 for which data are available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Month	Range of operation head (feet)			Supply passing through turbines (cusecs)	
	Bhandadara Dam	*Randha falls*	*Mahaldevi Dam*	*Bhandardara Dam and Randha falls*	*Mahaldevi Dam*
June July August September	167 to 270	168	30 to 95	580	357
October November December January	270 to 247	168	95 to 90	585	362
February March April May	247 to 167	168	90 to 30	595	430
Total T.M.C.				**18.50**	**12.07**

20. Proposed disposal of tail-race waters

The tail-race waters from Bhandardara Dam will also pass through Randha falls Power House and then pass partly through Mahaldevi Dam Power House and partly into Mahaldevi Canal. The tail-race waters from Mahaldevi Power House will be picked up at Ozar weir for irrigation by Pravara Canals.

21. Quantum of river supplies available in relation to withdrawals

See item 18 above

GENERAL

22. Aspects other than irrigation and power ; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Details of submergence	Pravara at Kanarwadi	Pravara at Mahaldevi
	..................*acres*..	....
Culturable Area	380	200
Forest	300	—
Waste land	300	3,000
Total	**980**	**3,200**

Submergence wholly in Maharashtra

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture and generation of power

PURNA CANAL EXTENSION PROJECT

81C.3-G.3-M.6

1. **Name of State** Maharashtra (formerly in Hyderabad)

2. **Scope of the scheme or system**

   Irrigation scheme ; flow-cum-storage ; additional C.C.A. 26,000 acres

3. **Source of supply**

   Asna at Alegaon/**Godavari**

   Utilisation upstream : nil

4. **Description of the reservoir or tank**

Live storage	1.70 T.M.C.
Dead storage	0.17 ,,
Carry-over	Nil
Annual reservoir losses	0.70 T.M.C.
Filling period	June to October
Depletion period	June to May
Catchment area	193 square miles
Area submerged	3,000 acres
Full reservoir level	R.L. 1,220
Dead storage level	R.L. 1,197

5. **Description of the headworks**

   Dam : earthen, 3,600 feet long, 45 feet high

   Spillway : masonry; ungated; 400 feet long; capacity 97,300 cusecs

   Outlet : head regulators on both flanks; capacities 100 and 70 cusecs for right and left respectively to feed some upper distributaries of Purna Canal and thus release supplies in exchange, for this project

6. **Description of the canal**

   Extension of Purna Canal beyond **mile 34** to mile 50 ; **perennial;** lined; authorised capacity **240 cusecs** at mile 34 (no change in head reach)

7. (a) **Nature of investigations carried out up-to-date**

   Surveys completed, project report not ready

   (b) **Actual or probable date of beginning of construction** **IV Plan**

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Nanded

G.C.A.	30,000	acres
C.C.A.	26,100	„
Deduct area under existing wells	100	„
Net C.C.A.	26,000	„

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	2,000 acres	7.7 percent
Kharif	6,000 „	23.1 „
Rabi	13,000 „	50.0 „
Two seasonal	5,000 „	19.2 „
Total	**26,000** „	**100.0** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*...............			.......*T.M.C.*...........	
June	4.6	7.3	3.6	15th June to 14th Oct.	
July	12.4	27.2	4.9	0.80	0.32
August	11.0	19.8	2.3		
September	7.1	13.0	2.5		
October	1.6	3.3	0.3	15th Oct. to 14th Feb.	
November	0.2	1.0	Nil	1.20	0.47
December	—	0.1	„		
January	0.2	1.3	„		
February	0.6	2.4	„	15th Feb. to 14th June	
March	0.2	0.7	„	0.30	0.12
April	0.7	2.0	„		
May	0.7	1.2	0.2		
Total	**39.3**			**2.30**	

12. Not available

13. **(a) Characteristics of soils in the commanded area**

Sandy to sandy loam 13 percent; sandy loam to clayey loam 42 percent and clayey loam to clay 45 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. **Existing pattern of cultivation in the area proposed to be irrigated**

Perennial			*Two seasonal*			*Kharif*				*Rabi*				
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Total cropped area (T. acres)*
Sugarcane	*Others*		*Cotton*	*Others*		*Jowar*	*Paddy*	*Others*		*Jowar*	*Wheat*	*Others*		
0.5	0.7	0.3	27.6	7.8	9.2	19.2	1.5	9.3	7.8	22.6	6.6	4.2	8.7	26.0

15. **(a) Proposed pattern of irrigated cultivation**

Perennial			*Two seasonal*		*Kharif*		*Rabi*			
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Grand Total (T. acres)*
Plantains	*Others*		*Chillies*		*Green manure*		*Jowar*	*Gram*		
5.0	2.7	2.0	19.2	5.0	23.1	6.0	30.0	20.0	13.0	26.0

(b) Are there any rules for resulating crop pattern ?

No, but sanctions will be regulated to conform to the proposed crop pattern.

16. **Duty and Delta at canal head (as anticipated)**

Duty
(acres per mean cusec)

	Plantains	*Other perennial*	*Two seasonal*	*Green manure*	*Gram*	*Jowar*
Kharif	80	120	160	400	—	—
Rabi	70	105	140	—	400	200
Hot weather	50	175	—	—	—	—

Overall delta at canal head 2.0 feet

17. **(a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

50 wells, irrigating about 2 acres each, excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

The entire submergence would lie in Maharashtra, culturable 2,400 acres, waste land 600 acres

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

KAPRA PROJECT

82C.3-G.3-M.7

1. **Name of State** Maharashtra (formerly in Hyderabad)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 17,100 acres

3. **Source of supply**

Kapra near Newal-khurd/Purna/**Godavari**
Utilisation upstream : nil

4. **Description of the reservoir or tank**

Live storage	0.60 T.M.C.
Dead storage	0.10 ,,
Carry-over	Nil
Annual reservoir losses	0.17 T.M.C.
Filling period	15th June to end of Oct.
Depletion period	15th June to 14th Feb.
Catchment area	105 square miles
Area submerged	1,620 acres
Full reservoir level	R.L. 1,400
Minimum pond level	R.L. 1,388

5. **Description of the headworks**

Dam :	earthen; 3,100 feet long; 53 feet high
Spillway :	masonry; 815 feet long; capacity 71,780 cusecs
Outlet :	head regulators in left and right flanks, capacities 12 cusecs and 103 cusecs respectively

6. **Description of the canals**

Kapra Left Bank Canal (contour); 3 miles long; two seasonal; unlined; authorised capacity **12 cusecs**

Kapra Right Bank Canal (5 miles contour, 5 miles ridge); two seasonal; unlined; authorised capacity **103 cusecs**

7. **(a) Nature of investigations carried out up-to-date**

Project report under preparation

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Parbhani

G.C.A.	19,200 acres
C.C.A.	17,300 ,,
Deduct area irrigated under wells	200 ,,
Net C.C.A.	17,100 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Two seasonal	4,000 acres	23.4 percent
Kharif	7,000 ,,	40.9 ,,
Rabi	4,500 ,,	26.3 ,,
Total	**15,500** ,,	**90.6** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*..........			........*T.M.C.*...........	
June	6.0	16.8	0.1		
July	8.0	17.4	0.7	15th June to 14th Oct.	
August	6.5	19.1	0.5	0.45	0.37
September	7.0	25.1	Nil		
October	1.5	11.9	,,		
November	0.8	6.4	,,	15th Oct. to 14th Feb.	
December	0.3	3.3	,,	0.62	0.51
January	0.3	4.4	,,		
February	0.4	3.6	,,	15th Feb. to 14th June	
March	0.2	1.2	,,	Nil	—
April	0.3	5.4	,,		
May	0.5	4.5	,,		
Total	**31.8**			**1.07**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 25 percent, silty loam to clayey loam 35 percent and clayey loam to clay loam 40 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*			*Kharif*						
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*						*Total area (T. acres)*
Sugar-cane	*Others*		*Cotton*	*Others*		*Paddy*	*Jowar*	*Pulses*	*Groundnut*	*Others*	*Oilseeds*	
0.1	0.1	Negligible	27.2	1.1	4.9	1.1	21.4	13.9	4.6	0.6	1.7	7.5

continued below

continued from above

Rabi				*Miscellaneous*		*Total cropped area (T. acres)*
Percentage of principal crops			*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Wheat	*Jowar*	*Others*		*Fodder & Mics.*		
3.5	19.7	2.9	4.5	2.3	0.4	17.3

15.(a) Proposed pattern of irrigated cultivation

Two seasonal		*Kharif*		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Pulses, cotton etc.		*Jowar*		*Wheat*		
25.8	4.0	45.2	7.0	29.0	4.5	15.5

(b) Are there any rules for regulating crop pattern?

No; but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Two seasonal	160	140	1.5	1.8	3.3
Kharif	400	—	0.6	—	0.6
Rabi	—	150	—	1.6	1.6
Overall delta at canal head		1.6 feet			

17. (a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

Nil

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

About 80 wells irrigating 2 to 3 acres per well, area excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

The entire submergence lies in Maharashtra (culturable 1,450 acres; forest 85 acres and waste lands 85 acres)

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

KALYAN PROJECT

83C.3-G.3-M.8

1. **Name of State** Maharashtra (formerly in Hyderabad)

2. **Scope of the scheme or system**

   Irrigation scheme; flow-cum-storage; C.C.A. 10,800 acres

3. **Source of supply**

   Kalyan near Pimpri/Dudna/Purna/Godavari

   Utilisation upstream: nil

4. **Description of the reservoir or tank**

Live storage	0.50 T.M.C.
Dead storage	0.07 „
Carry-over	Nil
Annual reservoir losses	0.19 T.M.C.
Filling period	15th June to end of Oct.
Depletion period	15th June to 14th Feb.
Catchment area	89 square miles
Area submerged	1,900 acres
Full reservoir level	R.L. 1,507
Minimum pond level	R.L. 1,500

5. **Description of the headworks**

   Dam : earthen, with masonry spillway in river gorge, 6,900 feet long, 20 feet high

   Spillway : masonry, gated 390 feet long; capacity 64,704 cusecs

   Outlets : head regulator in left flank; capacity 73 cusecs

6. **Description of the canal**

   Kalyan Canal (contour); left bank; 12 miles long; two-seasonal: unlined; authorised capacity **73 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

   Present proposal based largely on topo-sheet studies

   (b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

	Names of districts		
	Aurangabad	Parbhani	Total
	thousand acres		
G.C.A.	7.7	4.5	12.2
C.C.A.	6.9	4.2	11.0
Deduct area irrigated under wells			**0.2**
Net C.C.A.			10.8

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Two seasonal	3,600 acres	33.3 percent
Kharif	1,000 „	9.3 „
Rabi	2,400 „	22.2 „
Total	**7,000 „**	**64.8 „**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	inches			*T.M.C.*	
June	6.0	16.7	0.6	15th June to 14th Oct.	
July	7.5	15.9	0.1		
August	6.0	12.7	0.3	0.27	0.35
September	6.5	22.6	Nil		
October	1.5	8.4	„	15th Oct. to 14th Feb.	
November	0.9	10.4	„		
December	0.4	6.8	„	0.46	0.59
January	0.3	3.5	„		
February	0.2	2.2	„	15th Feb. to 14th June	
March	0.2	1.7	„		
April	0.2	3.5	„	Nil	
May	0.5	3.6	„		
Total	**30.2**			**0.73**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 30 percent; silty loam to clayey loam 35 percent and clayey loam to clay 35 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Two seasonal*		
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*
Others		*Cotton*	*Others*	
1.8	0.2	22.3	0.7	2.6

continued below

continued from above

Kharif						*Rabi*				
Percentage of principal crops					*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Total cropped area (T. acres)*
Paddy	*Jowar*	*Pulses*	*Groundnut*	*Others*		*Wheat*	*Jowar*	*Safflower*		
3.2	9.1	14.3	6.1	8.0	4.6	4.5	22.2	7.8	3.9	11.3

15. (a) Proposed pattern of irrigated cultivation

Two seasonal		*Kharif*		*Rabi*		
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Grand Total (T. acres)*
Pulses etc.		*Jowar & Groundnut*		*Wheat*		
51.4	3.6	14.3	1.0	34.3	2.4	7.0

(b) Are there any rules for regulating crop pattern ?

No, but sanctions will be regulated to conform to the proposed crop-pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		Delta (feet)		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Two seasonal	160	140	1.5	1.7	3.2
Kharif	400	—	0.6	—	0.6
Rabi	—	150	—	1.6	1.6
Overall delta at canal head			2.1 feet		

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

About 100 wells, irrigating 2 to 3 acres per well, area excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Culturable area 1,700 acres, forests or waste lands 200 acres

24 to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

LOWER DUDNA PROJECT 84C.3-G.3-M.9

1. **Name of State** Maharashtra (formerly in Hyderabad)

2. **Scope of the scheme or system**

Irrigation scheme ; flow-cum-storage; C.C.A. 115,000 acres

3. **Source of supply**

Dudhna near Rajwari/Purna/**Godavari**

Utilisation upstream :

existing : nil

proposed : 3 medium and two minor projects diverting about 3.7 T.M.C.

4. **Description of the reservoir or tank**

Live storage	2.50 T.M.C.
Dead storage	2.20 ,,
Carry-over	Nil
Annual reservoir losses	0.90 ,,
Filling period	15th June to end of Oct.
Depletion period	15th June to end of Nov.
Catchment area	1,659 square miles
Area submerged	9,900 acres
Full reservoir level	R.L. 1,358
Minimum pond level	R.L. 1,350

5. **Description of the headworks**

Dam : earthen, 21,900 feet long, 78 feet high

Spillway : masonry, 1,760 feet long, capacity 284,500 cusecs

Outlets : head regulators in left and right flanks, capacity 1,100 cusecs and 700 cusecs respectively.

6. **Description of the canals**

Dudhna Left Bank Canal (contour); 28 miles long; two seasonal; unlined; authorised capacity **1,100 cusecs**

Dudhna Right Bank Canal (contour); 27 miles long; two seasonal; unlined; authorised capacity **700 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Present proposal based mainly on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Parbhani

	Parbhani Left Bank Canal	*Parbhani Right Bank Canal*	*Total*
	....................*thousand acres*..........................		
G.C.A.	78.8	50.7	129.5
C.C.A.	70.9	45.6	116.5
Deduct irrigated area under wells			1.5
Net C.C.A.			115.0

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	80,000 acres	69.6 percent
Rabi	43,000 „	37.4 „
Total	**123,000** „	**106.9** „

An additional 9,000 acres will be cultivated as per item 22 below

11. Normal rainfall and river supply proposed to be diverted (both canals)

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	.........*inches*..........			....*T.M.C.*....	
June	6.0	20.1	Nil		
July	8.0	15.2	„	15th June to 14th Oct.	
August	6.5	14.5	1.9	9.00	0.47
September	7.0	19.3	Nil		
October	1.5	10.1	„		
November	0.8	15.4	„	15th Oct. to end of Nov.	
December	0.3	2.6	„	3.50	0.48
January	0.3	34.9	„		
February	0.4	6.2	„	1st Dec. to 14th June	
March	0.4	3.4	„	Nil	—
April	0.3	3.4	„		
May	0.6	3.6	„		
Total	**32.1**			**12.50**	

12. Not available

13. (a) **Characteristics of soils in the commanded area**

Sandy to sandy loam 25 percent; silty loam to clayey loam 35 percent and clayey loam to clay 40 percent

(b) **Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?**

No

14. **Existing pattern of cultivation in the area proposed to be irrigated**

Perennial			*Two seasonal*		
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*
Sugarcane	*Others*		*Cotton*	*Others*	
0.2	0.2	0.4	23.1	1.1	28.2

continued below

continued from above

Kharif						*Rabi*				*Hot weather*	*Total croppea area (T. acres)*
Percentage of principal crops					*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percetage of principal crops*	
Paddy	*Jowar*	*Pulses*	*Ground-nut*	*Others*		*Wheat*	*Jowar*	*Others*		*Others*	
0.9	15.3	12.5	6.4	3.1	44.6	3.4	26.3	6.2	41.8	1.3	1.5

15. (a) **Proposed pattern of irrigated cultivation**

Kharif		*Rabi*		*Grand Tota. (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Gram*		
65.0	80.0	35.0	43.0	123.0

(b) **Are there any rules for regulating crop pattern ?**

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (*acres per mean cusec*)		*Delta* (*feet*)		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	100	400	2.4	0.6	3.0
Gram	—	400	—	0.6	0.6
Overall delta at canal head			2.3 feet		

17. **(a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

About 760 wells; irrigating about 2 acres per well, area excluded from the C.C.A.

18. **Quantum of river supplies available in relation to withdrawals**

River supply data not available

19. to 21. Not applicable

GENERAL

22. **Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns**

Of the submerged area, about 9,000 acres will bear a *Rabi* crop

23. **Extent and type of area submerged by reservoir**

Culturable area 9,000 acres, waste lands 900 acres; all in Maharashtra

24. to 26. Not available

27. Not applicable

28. **Main features and purpose of the scheme**

Conversion of rain-fed cultivation to irrigated agriculture

DHANEGAON PROJECT 85C.3-G.4-M.10

1. **Name of State** Maharashtra (formerly in Hyderabad)

2. **Scope of the scheme or system**
Irrigation scheme; flow-cum-storage; C.C.A. 35,000 acres

3. **Source of supply**
Manjra at Dhanegaon/**Godavari**
Utilisation upstream:
existing : nil
proposed: minor tanks only

4. **Description of the reservoir or tank**

Live storage	1.00 T.M.C.
Dead storage	1.10 ,,
Carry-over	Nil
Annual reservoir losses	0.40 T.M.C.
Filling period	15th June to end of Oct.
Depletion period	15th June to 30th Nov.
Catchment area	948 square miles
Area submerged	3,880 acres
Full reservoir level	R.L. 2,077
Minimum pond level	R.L. 2,070

5. **Description of the headworks**
Dam : earthen, 12,100 feet long, 56 feet high
Spillway: masonry, 822 feet long, capacity 215,000 cusecs
Outlets : head regulator in left flank, capacity 582 cusecs

6. **Description of the canal**
Manjra Canal (contour); left bank; 32 miles long; two seasonal; unlined; authorised capacity **582 cusecs**

7. **(a) Nature of investigations carried out up-to-date**
Present proposal based mainly on topo-sheet studies

(b) Not available

8 Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District	Bhir
G.C.A.	44,100 acres
C.C.A.	35,000 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	26,000 acres	74.4 percent
Rabi	25,000 „	71.4 „
Total	**51,000 „**	**145.8 „**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	................*inches*..................................			......*T.M.C.*.....	
June	5.5	14.2	Ni	15th June to 14th Oct.	
July	6.0	19.5	„	4.50	0.74
August	5.5	15.3	„		
September	7.5	18.0	„		
October	2.0	9.1	„	15th Oct. to 30th Nov.	
November	0.9	7.9	„	1.50	0.64
December	0.3	4.6	„		
January	0.3	4.1	„		
February	0.3	3.0	„	1st Dec. to 14th June	
March	0.3	2.8	„		
April	0.5	3.1	„	Nil	
May	0.9	6.1	„		
Total	**30.0**			**6.00**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 20 percent, sandy loam to clayey loam 35 percent and clayey loam to clay 45 percent

(b) Has any study been made of the likely effect of the introduction of irrigation of soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*			*Kharif*						
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*						*Total area (T. acres)*
Sugar cane	*Others*		*Cotton*	*Others*		*Paddy*	*Jowar*	*Pulses*	*Groundnut*	*Oil seeds*	*Others*	
0.5	0.3	0.6	6.6	1.7	6.4	2.3	36.1	14.9	10.3	5.3	1.8	47.0

continued below

continued from above

Rabi		*Total area (T. acres)*	*Total cropped area (T. acres)*
Percentage of principal crops			
Wheat	*Jowar*		
7.9	12.9	21.4	75.4

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Gram*		
51.0	26.0	4.9	25.0	51.0

(b) Are there any rules for regulating crop pattern ?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at canal head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	65	400	3.7	0.6	4.3
Gram	—	400	—	0.6	0.6
Overall delta at canal head			2.7 feet		

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

320 wells; irrigating about 2 to 3 acres per well *i. e.* 640 acres, area excluded from the C.C.A

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Culturable area	3,000 acres
Waste	880 ,,
Total	**3,880 ,,**

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

DEVNOOR PROJECT 86C.3-G-M. 11

1. **Name of State** Andhra Pradesh* and Maharashtra (formerly in Hyderabad)

2. **Scope of scheme**

Multi-purpose scheme; flow-cum-storage; power 30,000 kW. installed at canal Power House and 3,000 kW. at dam Power House; irrigation C.C.A. 80,000 acres

3. **Source of supply**

Manjra at Devnoor/**Godavari**
Utilisation upstream:
existing : nil
proposed : considerable

4. **Description of reservoir**

Same as **8C.3-G.4-A.8**

5. **Description of headworks**

Dam : same as **8C.3-G.4-A.8**

Pick-up-weir : 5 miles down-stream of Nizamsagar on Manjra River situated near Kamlancha village, masonry 800 feet long with flood branches 2,912 feet long

Irrigation sluice : 4 numbers 4 feet x 6 feet each ; total capacity **500 cusecs**

6. **Description of canals**

Contour canal 13 miles long, same as under **8C.3-G.4-A.8**

Manjra Left Bank Canal (contour); 39 miles long (15 miles in Andhra Pradesh and rest in Maharashtra); perennial; unlined; authorised capacity 500 cusecs at head and 350 cusecs at the border between Andhra Pradesh and Maharashtra

7. (a) **Nature of investigations carried out up-to-date**

Project report ready

(b) **Actual or probable date of beginning of construction**

IV Plan

8. **Probable date of beginning of operation**

V Plan

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*The particulars have been supplied by Maharashtra ; Andhra Pradesh have proposed instead a purely hydro-electric scheme 8C.3-G.4-A.8

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

	Name of districts		*Total*
	Nizamabad (Andhra Pradesh)	*Nanded (Maharashtra)*	
	……………*thousand acres*……………………		
G.C.A.	25.0	75.0	100.0
C.C.A.	20.0	60.0	80.0

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	10,000 acres	12.4 percent
Kharif (paddy)	10,000 „	12.4 „
Rabi	33,000 „	41.5 „
Total	**53,000** „	**66.3** „

11. Normal rainfall and river supply proposed to be diverted

Rainfall	*River supply proposed to be diverted*			*Capacity factor*
	Andhra Pradesh	*Maharashtra*	*Total*	
	………… *T.M.C.* ……………			
	15th June to 14th Oct.			
Same as in **89C.3-G.4-M.14**	0.90	3.00	3.90	0.74
	15th Oct. to 14th Feb.			
	0.90	3.00	3.90	0.74
	15th Feb. to 14th June			
	0.40	1.00	1.40	0.27
Total	**2.20**	**7.00**	**9.20**	

12. to 14. Not available

15. (a) Proposed pattern of irrigated cultivation

Perennial			*Kharif*		*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Garden	*Others*		*Paddy*		*Paddy*	*Others*		
9.4	9.4	10.0	18.9	10.0	5.7	56.6	33.0	53.0

(b) Are there any rules for regulating crop pattern ?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

Duty
(acres per mean cusec)

Perennial	*Paddy*		*Rabi*
	1st crop	*2nd crop*	*others*
110	90	50	150

Overall delta at. canal head 4.0 feet

17-18. Not available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Same as in **8C.3-G.4-A.8**

20. Proposed disposal of tail-race waters

Will be let into the river; part of it will be picked up for irrigation

21. Not available

GENERAL

22. Nil

23. Extent and type of area submerged

Same as in **8C.3-G.4-A.8**

24. Total cost of scheme

Rs. 960.0 lakhs (Andhra Pradesh)
Rs. 123.0 ,, (Irrigation Andhra and Maharashtra)

25. Financial return of scheme

4.18 percent (Andhra Pradesh)
6.82 ,, (Irrigation in Andhra and Maharashtra)

26. Cost per acre irrigated

Rs. 240/- (based on 1952 report)

27. Cost per kW. of power produced

Rs. 2,955/- per kW.

28. Main features and purpose of the scheme

Power generation, conversion of rain-fed cultivation to irrigated agriculture

29. Special features of the scheme

Andhra Pradesh has proposed only hydro-electric project at this site *vide* **8C.3-G.4-A8.**

TAWARJA PROJECT

87C.3-G.4-M.12

1. **Name of State** Maharashtra (formerly in Hyderabad)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 8,500 acres

3. **Source of supply**

Tawarja near Siur/Manjra/**Godavari**

No utilisation upstream

4. **Description of the reservoir or tank**

Live storage	0.63 T.M.C.
Dead storage	0.10 ,,
Carry-over	Nil
Annual reservoir losses	0.16 T.M.C.
Filling period	15th June to end of Oct.
Depletion period	15th June to 14th Feb.
Catchment area	92 square miles
Area submerged	1,600 acres
Full reservoir level	R.L. 2,014
Minimum pond level	R.L. 2,003

5. **Description of the headworks**

Dam : earthen, 9,500 feet long, 53 feet high

Spillway: masonry, 750 feet long, capacity 65,700 cusecs

Outlets : head regulator in left flank, capacity 66 cusecs

6. **Description of the canal**

Tawarja Canal (contour); left bank; 17 miles long; two seasonal; unlined; capacity **66 cusecs**

7. **(a) Nature of investigations carried out up-to-date**

Present proposal based largely on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Osmanabad

G.C.A.	9,600 acres
C.C.A.	8,600 ,,
Deduct area under well irrigation	100 ,,
Net C.C.A.	8,500 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Two seasonal	4,000 acres	47.1 percent
Kharif	1,500 ,,	17.6 ,,
Rabi	2,100 ,,	24.7 ,,
Total	**7,600** ,,	**89.4** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*............			......*T.M.C.*......	
June	3.5	18.5	0.9	15th June to 14th Oct.	
July	6.0	21.0	1.3		
August	6.0	21.8	3.4	0.32	0.46
September	7.5	17.7	0.8		
October	2.0	7.8	Nil	15th Oct. to 14th Feb.	
November	0.8	7.0	,,		
December	0.3	0.8	,,	0.47	0.67
January	0.3	1.1	,,		
February	0.3	1.9	,,	15th Feb. to 14th June	
March	0.3	2.8	,,		
April	0.5	5.3	,,	Nil	
May	0.9	6.7			
Total	**28.4**			0.79	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 20 percent, silty loam to clayey loam 35 percent and clayey loam to clay 45 percent

(b) Has any study been made of the likely effect of introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*			*Kharif*					
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*					*Total area (T. acres)*
Sugarcane	*Others*		*Cotton*	*Others*		*Jowar*	*Pulses*	*Groundnut*	*Oilseed*	*Others*	
1.0	0.2	0.1	4.8	1.0	0.5	26.3	15.3	9.5	5.5	3.9	5.2

continued below

continued from above

Rabi					*Hot weather*		*Total cropped area (T. acres)*
Percentage of principal crops				*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Wheat	*Jowar*	*Gram*	*Others*		*Fodder*		
7.2	12.7	5.5	3.6	2.5	3.5	0.3	8.6

15. (a) Proposed pattern of irrigated cultivation

Two seasonal		*Kharif*		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Pulses, Cotton etc.		*Jowar & Groundnut*		*Wheat*		
52.7	4.0	19.7	1.5	27.6	2.10	7.60

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Two seasonal	160	140	1.5	1.7	3.2
Kharif	400	—	0.6	—	0.6
Rabi	—	150	—	1.6	1.6

Overall delta at canal head 2.4 feet

17. (a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

Nil

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

60 wells, irrigating about 2 acres per well, excluded from the C.C.A.

18. **Quantum of river supplies available in relation to withdrawals**

River supply data not available

19. to 21. Not applicable

GENERAL

22. **Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns**

Nil

23. **Extent and type of area submerged by reservoir**

Entire submergence within Maharashtra (culturable 1,400 acres, waste lands 200 acres)

24. to 26. Not available

27. Not applicable

28. **Main features and purpose of the scheme**

Conversion of rain-fed cultivation to irrigated agriculture

LOWER TIRNA PROJECT 88C.3-G.4-M.13

1. **Name of State** Maharashtra (formerly in Hyderabad)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum storage; C.C.A. 81,400 acres

3. **Source of supply**

Tirna near Makni/Manjra/**Godavari**
Utilisation upstream:
existing : nil
proposed : about 0.50 T.M.C.

4. **Description of the reservoir or tank**

Live storage	3.87 T.M.C.
Dead storage	0.85 ,,
Carry-over	Nil
Annual reservoir losses	0.91 T.M.C.
Filling period	15th June to Oct.
Depletion period	15th June to 14th Feb.
Catchment area	690 square miles
Area submerged	8,700 acres
Full reservoir level	R. L. 1,977
Minimum pond level	R. L. 1,962

5. **Description of the headworks**

Dam : earthen, 8,700 feet long, 41 feet high
Spillway : masonry 1,060 feet long, capacity 161,000 cusecs
Outlets : right flank, capacity 300 cusecs; left flank, capacity 310 cusecs

6. **Description of the canals**

Makni Left Bank Canal (contour); 41 miles long; two seasonal; unlined; capacity **310 cusecs**

Makni Right Bank Canal (contour); 31 miles long; two seasonal; unlined; capacity **300 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Present proposals based largely on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District	Osmanabad
G.C.A.	90,800 acres
C.C.A.	81,700 „
Area under well irrigation	300 „
Net C.C.A.	**81,400** „

10. Area proposed to be irrigated annually and intensity of irrigation (both canals)

	Area proposed to be irrigated	*Intensity of irrigation*
Two seasonal	34,400 acres	42.3 percent
Kharif	20,000 „	24.5 „
Rabi	19,500 „	24.0 „
Total	73,900 „	**90.8** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..............*inches*............			..........*T.M.C.*	
June	5.5	18.5	0.9	15th June to 14th Oct.	
July	6.5	21.0	1.3		
August	6.0	21.8	3.4	2.99	0.47
September	7.5	17.7	0.8		
October	2.0	7.7	Nil	15th Oct. to 14th Feb.	
November	0.8	7.0	„		
December	0.3	0.8	„	4.30	0.80
January	0.3	1.1	„		
February	0.3	1.9	„	15th Feb. to 14th June	
March	0.3	2.8	„		
April	0.9	6.7	„	Nil	—
May					
Total	**30.4**			**7.29**	—

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 20 percent, sandy loam to clayey loam 35 percent and clayey loam to clay 45 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on the soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*			*Kharif*					
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*					*Total area (T. acres)*
Sugarcane	*Others*		*Cotton*	*Others*		*Jo-war*	*Pul-ses*	*Ground-nut*	*Oil-seed*	*Oth-ers*	
0.6	2.8	2.8	5.6	2.2	6.4	18.3	18.4	10.7	6.4	6.2	49.5

continued below

continued from above

Rabi				*Hot weather*		*Total cropped area (T. acres)*
Percentage of principal crops			*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Wheat	*Gram*	*Jowar*		*Fodder*		
6.8	5.6	12.8	20.0	3.6	3.0	81.7

15. (a) Proposed pattern of irrigated cultivation

Two seasonal		*Kharif*		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area*	*Percentage of principal crops*	*Total area*	*Percentage of principal crops*	*Total area*	
Pulses, Cotton etc.	*(T. acres)*	*Jowar & Ground-nut*	*(T. acres)*	*Wheat*	*(T. acres)*	
46.5	34.4	27.1	20.0	26.4	19.5	73.9

(b) Are there any rules for regulating crop pattern ?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Two Seasonal	160	140	1.5	1.8	3.3
Kharif	400	—	0.6	—	0.6
Rabi wheat		150	—	1.6	1.6

Overall delta at canal head 2.3 fee.t

17.(a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

Nil

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

50 wells, irrigating 2 to 3 acres per well, area excluded from the C.C.A.

18. **Quantum of river supplies available in relation to withdrawals**

River supply data not available

19. to 21. Not applicable

GENERAL

22. **Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns**

Nil

23. **Extent and type of area submerged by reservoir**

Entire submergence within Maharashtra (culturable 8,000 acres, waste 700 acres)

24. to 26. Not available

27. Not applicable

28. **Main features and purpose of the scheme**

Conversion of rain-fed cultivation to irrigated agriculture

LENDI PROJECT

89C.3-G.4-M.14

1. **Name of State** Maharashtra (formerly in Hyderabad)

2. **Scope of the scheme or system**

   Irrigation scheme ; flow-cum-storage; C.C.A. 56,500 acres

3. **Source of supply**

   Lendi near Thana/Manjra/Godavari

   Utilisation upstream : nil

4. **Description of the dam and reservoir or tank**

Live storage	2.10 T.M.C.
Dead storage	0.50 ,,
Carry-over	Nil
Annual reservoir losses	0.40 T.M.C.
Filling period	15th June to end of Oct.
Depletion period	15th June to end of Nov.
Catchment area	615 square miles
Area submerged	3,930 acres
Full reservoir level	R.L. 1,258
Minimum pond level	R.L. 1,238

5. **Description of the headworks**

   Dam : earthen, 4,500 feet long, 61 feet high

   Spillway : masonry, gated, 825 feet long; 41 feet high, capacity 173,600 cusecs

   Outlets : head regulator, capacity 1,000 cusecs

6. **Description of the canal**

   Lendi Canal (contour); left bank; 17 miles long; two seasonal; unlined; capacity **1,000 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

   Present proposals based mainly on topo-sheet studies

   (b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

	Name of districts		*Total*
	Nanded	*Osmanabad*	
	..........*thousand acres*............		
G.C.A.	53.4	9.6	63.0
C.C.A.	48.1	8.6	56.7
Deduct area irrigated under wells			0.2
Net C.C.A.			56.5

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	46,000 acres	81.4 percent
Rabi	43,000 „	76·1 „
Total	**89,000 „**	**157.5 „**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*...........			........*T.M.C.*........	
June	6.0	17.5	1.0	15th June to 14th Oct.	
July	8.0	18.2	0.4		
August	6.0	23.7	0.7	5.05	0.48
September	7.0	20.1	0.3		
October	2.0	11.7	Nil	15th Oct. to end of Nov.	
November	0.8	5.2	„		
December	0.3	2.2	„	2.47	0.61
January	0.3	1.8	„		
February	0.3	2.9	„	1st Dec. to 14th June	
March	0.3	4.4	„		
April	0.5	3.6	„	Nil	—
May	0·8	4.4	„		
Total	**32.3**			**7.52**	

12. Not available

13. **(a) Characteristics of soils in the commanded area**

Sandy to sandy loam 10 percent; silty loam to clayey loam 30 percent and clayey loam to clay 60 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. **Existing pattern of cultivation in the area proposed to be irrigated**

Perennial		*Two seasonal*				*Kharif*					
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*					*Total area (T. acres)*
Others		*Cotton*	*Chillies*	*Others*		*Jowar*	*Pulses*	*Groundnut*	*Oil-seed*	*Others*	
0.2	0.1	15.4	5.4	0.2	11.9	15.3	14.1	6.8	7.5	2.4	25.7

continued below

continued from above

Rabi					*Hot weather*		*Total cropped area (T. acres)*
Percentage of principal crops				*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Wheat	*Jowar*	*Gram*	*Others*		*Fodder*		
4.8	17.4	7.6	1.7	17.6	2.5	1.4	56.7

15. **(a) Proposed pattern of irrigated cultivation**

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Gram*		
51.7	46.0	48.3	43.0	89.0

(b) Are there any rules for regulating crop pattern ?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. **Duty and Delta at distributory head (as anticipated)**

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	100	400	2.4	0.6	3.0
Gram	—	400	—	0.6	0.6
Overall delta at canal head			1.9 feet		

17. (a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

Nil

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

83 wells, irrigating about two acres per well (say 200 acres); excluded from the C.C.A.

18. **Quantum of river supplies available in relation to withdrawals**

River supply data not available

19. to 21. Not applicable

GENERAL

22. **Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns**

Nil

23. **Extent and type of area submerged by reservoir**

Culturable 3,230; waste lands 700 acres; entire area within Maharashtra

24. to 26. Not available

27. Not applicable

28. **Main features and purpose of the scheme**

Conversion of rain-fed cultivation to irrigated agriculture

MANAR PROJECT-STAGE II

90C.3-G.4-M.15

1. **Name of State** Maharashtra (formerly in Hyderabad)

2. **Scope of the scheme or system**

   Irrigation scheme; flow-cum-storage; additional C.C.A. 57,400 acres

3. **Source of supply**

   Manar near Warwant/Manjra/**Godavari**

   Upstream utilisation :

   existing : nil

   proposed : Manar stage I **17.CI-G.4-M.12**

4. **Description of the reservoir or tank**

		Over Stage I
Live storage	3.95 T.M.C.	2.21 T.M.C.
Dead storage	0.94 „	0.29 „
Carry-over	1.30 „	1.30 „
Annual reservoir losses	1.49 „	0.49 „
Filling period	June to Oct.	
Depletion period	June to May	
Catchment area	612 square miles	
Area submerged	4,760 acres	760 acres
Full reservoir level	R.L. 1,289	
Minimum pond level	R.L. 1,268	

5. **Description of the headworks**

   Dam : earthen, 6,244 feet long, 80 feet high

   Spillway: 1,578 feet long, capacity 173,000 cusecs

   Installation of flush escape gates 44 numbers, 30 feet x 11 feet each

   Outlets : 4 numbers, each 4 feet x 8 feet and

   2 numbers, each 2 feet x 2 feet

6. **Description of the canals**

   Remodelling Manar Left Bank Canal to the following particulars; (contour); 45 miles long; (branches 67 miles) perennial; unlined; authorised capacity **587 cusecs**

   Manar Right Bank Canal (contour); 12 miles long; perennial; unlined; authorised capacity **42 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

   Project report ready

   (b) **Actual or probable date of beginning of construction** III Plan

8. Probable date of beginning of operation 1965-66

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Nanded

	Right Bank Canal	*Left Bank Canal*	*Total*
	...............*thousand acres*..................		
G.C.A.	4.9	100.3	105.2
C.C.A.	4.4	86.9	91.3
Deduct area on wells			0.4
			90.9
Further deduct C.C.A. under Stage I			33.4
Additional C.C.A.			57.5

10. Area proposed to be irrigated annually and intensity of irrigation (both canals)

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	2,200 acres	2.4 percent
Two seasonal	11,900 ,,	13.0 ,,
Kharif	26,800 ,,	29.4 ,,
Rabi	23,300 ,,	25.5 ,,
Hot weather	1,800 ,,	2.0 ,,
Total	**66,000** ,,	**72.3** ,,
Deduct irrigation under Stage I	25,000 ,,	
Additional irrigation	41,000 ,,	

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*		*Capacity factor*	
	Normal	*Maximum*	*Minimum*	*Left Bank Canal*	*Right Bank Canal*	*Left Bank Canal*	*Right Bank Canal*
	................*inches*......			......*T.M.C.*......			
June	5.0	8.1	2.5	15th June to 14th Oct.			
July	12.4	21.1	5.2				
August	12.0	21.4	4.5	3.74	0.20	0.60	0.45
September	7.0	14.1	2.2				
October	2.5	3.4	1.6	15th Oct. to 14th Feb.			
November	Nil	Nil	Nil				
December	,,	,,	,,	2.24	0.12	0.36	0.27
January	,,	,,	,,				
February	0.6	2.5	,,	15th Feb. to 14th June			
March	0.8	2.0	0.3				
April	0.6	1.0	Nil	0.89	0.06	0.15	0.14
May	0.9	1.6	,,				
Total	**41.8**				**6.87**	**0.38**	

Total for both canals 7.25 T.M.C.

Deduct total diversion under Stage I 3.37 ,,

Additional diversion 3.88 ,,

12. Not available

13. (a) **Characteristics of soils in the commanded area**

Light soils (sandy to sandy loam 10 percent, medium soils (silty loam to clayey loam) 30 percent and deep soils (clayey loam to clay) 60 percent

(b) **Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?**

No

14. Existing pattern of cultivation* in the area proposed to be irrigated

Perennial			*Two seasonal*					*Kharif*				
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*
Sugarcane	*Others*		*Chillies*	*Cotton*	*Groundnut*	*Others*		*Paddy*	*Jowar*	*Pulses*	*Others*	
0.2	0.1	0.3	6.7	19.1	5.8	2.3	30.8	2.0	23.0	19.4	1.0	41.3

continued below

continued from above

Rabi				*Grand Total (T. acres)*
Percentage of principal crops			*Total area (T. acres)*	
Wheat	*Jowar*	*Others*		
2.9	10.0	7.5	18.5	90.9

15. (a) Proposed pattern of irrigated cultivation

Perennial			*Two seasonal*			*Kharif*		
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*
Sugarcane	*Others*		*Cotton*	*Others*		*Paddy*	*Others*	
2.3	1.0	2.2	11.9	6.1	11.9	13.8	26.8	26.8

continued below

continued from above

Rabi		*Hot weather*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Jowar		*Fodder*		
35.3	23.3	2.7	1.8	66.0

(b) Are there any rules for regulating crop pattern ?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (*acres per mean cusec*)			*Delta* (*feet*)			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Sugarcane	60	70	50	4.0	3.4	4.8	12.2
Other perennial	90	105	75	2.7	2.4	3.2	8.3
Cotton	180	210	150	1.4	1.1	1.6	4.1
Two seasonal	120	140	—	2.0	1.1	—	3.1
Paddy	80	—	—	3.1	—	—	3.1
Kharif	180	—	—	1.4	—	—	1.4
Rabi	80	210	—	—	1.1	—	1.1
Hot weather	—	—	150	—	—	1.6	1.6
Overall delta at canal head					2.52 feet		

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

236 wells, each capable of irrigating 2 acres of seasonal crop, area under wells excluded from the C.C.A

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

4,760 acres (cultivable 4,050 and Governmental waste land 710 acres) all in Maharashtra

24. Total cost of the scheme	Rs. 347 lakhs
25. Financial return of the scheme	1.39 percent
26. Cost per acre irrigated	Rs. 846/-

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

UPPER WARDHA PROJECT—STAGE II **91C.3-G.8-M.16**

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

Irrigation scheme, flow-cum-storage, additional C.C.A. 60,500 acres

3. **Source of supply**

Wardha at Karajgaon/Pranhita/**Godavari**
Utilisation upstream :
existing and proposed : nil

4. **Description of the reservoir or tank**

Karajgaon reservoir will be raised to the following particulars

Live storage	20.40 T.M.C.
Dead storage	3.00 ,,
Carry-over	1.80 ,,
Annual reservoir losses	4.00 ,,
Filling period	1st July to end of Sept.
Depletion period	1st July to 30th June
Catchment area	1,562 square miles
Area submerged	4,180 acres (addl. to Stage I)
Full reservoir level	R.L. 1,144
Minimum pond level	R.L. 1,100

5. **Description of the headworks**

Dam : earthen, 13,750 feet long, 120 feet high
Spillway : 590 feet long, capacity 276,400 cusecs
Outlets : two head regulators, capacity right flank 735 cusecs and left flank 415 cusecs

6. **Description of the canals**

Upper Wardha Right Bank Canal (same as per Stage I, **20C.2-G.8-M.10**)
Upper Wardha Left Bank Canal (contour); 33 miles long; perennial; unlined; capacity **415 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Preliminary investigations in progress

(b) **Actual or probable date of beginning of construction** IV Plan

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, (district-wise)

	Name of districts			
	Amravati Right Bank Canal	*Wardha Left Bank Canal*		*Total*
	................*thousand acres*..............			
G.C.A.	160.0	76.8		236.8
C.C.A.	128.0	61.4		189.4
Deduct area under wells			2.7	
Deduct C.C.A. under Stage I			126.2	128.9
Net C.C.A.				60.5

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	14,400 acres	7.7 percent
Two seasonal	10,000 ,,	5.3 ,,
Long staple cotton	24,000 ,,	12.7 ,,
Rabi	54,000 ,,	28.6 ,,
Total	**102,400** ..	**54.3** ,,
Deduct area proposed for irrigation under Stage I	68,000 acres	
Additional irrigation	34,400 acres	

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	................*inches*....................			....*T.M.C.*.....	
June	6.5	11.2	2.1	15th June to 14th Oct.	
July	10.5	19.3	3.2	3.46	0.30
August	7.8	14.8	1.6		
September	6.5	16.3	1.7		
October	1.8	8.8	Nil	15th Oct. to 14th Feb.	
November	0.8	4.7	,,	7.64	0.60
December	0.5	1.7	,,		
January	0.6	4.6	,,		
February	0.5	5.2	,,	15th Feb. to 14th June	
March	0.5	2.4	,,	5.93	0.50
April	0.2	2.1	,,		
May	0.7	2.6	,,		
Total	**36.9**			**17.03**	
Deduct diversion proposed under Stage I				14.10	
Additional diversion				2.93	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 15 percent, silty loam to clayey loam 30 percent, and clayey loam to clay 55 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

Nil

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Kharif*					*Rabi*		*Total cropped area (T. acres*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Others		*Jowar*	*Pulses*	*Cotton*	*Others*		*Others*		
0.3	0.5	32.0	10.0	48.0	5.0	180.0	4.7	8.9	189.4

15. (a) Proposed pattern of irrigated cultivation

Perennial			*Two seasonal*		*Long staple cotton*		*Rabi*			
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Grand Total (T. acres)*
Sugarcane	*Others*		*Chillies etc.*		*Long staple Cotton*		*Wheat*	*Jowar*		
9.4	4.7	14.4	9.8	10.0	23.4	24.0	43.8	8.9	54.0	102.4

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)			*Delta (feet)*			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Plantains/Sugarcane	80	70	50	3.1	3.5	4.8	11.4
Other perennial	120	100	75	2.0	2.5	3.2	7.7
Two seasonal	160	140	—	1.5	1.7	—	3.2
Long staple cotton	400	—	100	0.6	—	2.4	3.0
Wheat	—	150	—	—	1.6	—	1.6
Jowar	—	200	—	—	1.2	—	1.2

Overall delta at canal head 3.8 feet

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

1,350 wells each irrigating about 2 acres of seasonal crops (2,700 acres), excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial return

Nil

23. Extent and type of area submerged by reservoir

Culturable 2,200 acres, waste lands 980 acres and forest 1,000 acres the entire submergence lies in Maharashtra.

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

BEMBLA PROJECT

92C.3-G.8-M.17

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

   Irrigation scheme; flow-cum-storage; C.C.A. 79,000 acres

3. **Source of supply**

   Bembla near Bimpalkhuta and Sakhli Nalla near Mangrul Chavala/Wardha/Pranhita/**Godavari**

   Utilisation upstream:
   existing : nil
   proposed : nil

4. **Description of the reservoir or tank**

		Sakhli Nalla	*Bembla River*
Live storage	(T.M.C.)	0.95	4.30
Dead storage	,,	0.25	1.40
Carry-over	,,	Nil	0.10
Annual reservoir losses	(T.M.C.)	0.36	0.92
Filling period		15th June to end Oct.	15th June to end Oct.
Depletion period		1st Aug. to 30th June	1st Aug. to 14th Feb.
Catchment area	(square miles)	122	820
Area submerged	(acres)	1,510	7,800
Full reservoir level	(R.L.)	1,008	900
Minimum pond level	,,	986	880

5. **Description of the headworks**

	Sakhli Nalla	*Bembla River*
Dam :	earthen, 5,200 feet long, 50 feet high	earthen, 12,500 feet long, 62 feet high
Spillway :	masonry, 835 feet long, capacity 73,500 cusecs	masonry, 2,300 feet long, capacity 199,500 cusecs
Outlets :	sluice capacity 100 cusecs	head regulator in right flank, capacity 1,000 cusecs

6. **Description of the canal**

   Bembla Canal (contour); right bank; 50 miles long; perennial; unlined; capacity **1,000 cusecs**

7. **(a) Nature of investigations carried out up-to-date**

Present proposal based mainly on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

District Yeotmal

G.C.A.	99,000 acres
C.C.A.	79,500 „
Existing well irrigation	500 „
Net C.C.A.	79,000 „

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated	*Intensity of irrigation*
Long staple cotton	4,000 acres	5.1 percent
Two seasonal	12,000 „	15.2 „
Kharif	40,000 „	50.6 „
Rabi	20,000 „	25.3 „
Total	**76,000** „	**96.2** „

11. Normal rainfall and river supply proposed to be diverted

Month	Rainfall			River supply proposed to be diverted	Capacity factor
	Normal	Maximum	Minimum		
1	2	3	4	5	6
	..........inches	....		............T.M.C........	
June	5.9	20.4	1.2		
July	10.0	26.9	3.7	1st July to 14th Oct.	
August	7.5	18.3	1.4	2.30	0.35
September	6.0	19.6	0.7		
October	1.8	7.5	Nil		
November	0.6	4.2	,,	15th Oct. to 14th Feb.	
December	0.5	0.7	,,		
January	0.5	2.0	,,	2.34	0.22
February	0.4	3.4	,,		
March	0.3	2.8	,,		
April	0.3	4.6	,,	15th Feb. to 30th June	
May	0.7	3.9	,,	0.47	0.04
Total	**34.5**			**5.11**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 12 percent, sandy loam to clayey loam 28 percent and clayey loam to clay 60 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Two seasonal		*Kharif*						*Rabi*		*Total cropped area (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*					*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Chillies		*Paddy*	*Jowar*	*Pulses*	*Oil-seeds*	*Cotton*		*Wheat*		
1.0	0.8	1.0	35.0	12.1	3.0	44.0	75.0	4.1	3.2	79.0

15. (a) Proposed pattern of irrigated cultivation

Two seasonal		*Kharif*	
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*
Chillies, Pulses etc.		*Jowar*	
15.8	12.0	52.6	40.0

continued below

continued from above

Rabi		*Hot weather*		*Grand total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Jowar		*Long staple cotton*		
26.3	20.0	5.3	4.0	76.0

(b) Are there any rules for regulating crop pattern?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)			*Delta (feet)*			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Long staple cotton	400	—	100	0.6	—	2.4	3.0
Two seasonal	150	130	—	1.6	1.9	—	3.5
Kharif	400	—	—	0.6	—	—	0.6
Rabi	—	200	—	—	1.2	—	1.2

Overall delta at canal head 1.5 feet

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

250 wells, irrigating about 2 acres per well, area excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial return

Nil

23. Extent and type of area submerged by reservoir

	Bembla River	*Sakhali Nalla*	
Culturable area	5,469 acres	1,060 acres	Entire submergence in Maharashtra
Forest lands	780 „	151 „	
Waste lands	1,560 „	299 „	
Total	7,809 „	1,510 „	

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

KANHOLI PROJECT

93C.3-G.8-M.18

1. Name of State Maharashtra (formerly in Madhya Pradesh)

2. Scope of the scheme or system

Irrigation scheme; flow-cum storage; C.C.A. 5,200 acres

3. Source of supply

Kanholi/Wunna/Wardha/Pranhita/**Godavari**

Utilisation upstream :

existing : nil

proposed: nil

4. Description of the reservoir or tank

Live storage	0.66 T.M.C.
Dead storage	0.08 ,,
Carry-over	Nil
Annual reservoir losses	0.09 T.M.C.
Filling period	15th June to end of Oct.
Depletion period	1st Aug. to 14th Feb.
Catchment area	37 square miles
Area submerged	670 acres
Full reservoir level	R.L. 1,028
Minimum pond level	R.L. 998

5. Description of the headworks

Dam : earthen; 4,500 feet long, 68 feet high

Spillway : masonry; 571 feet long; capacity 40,180 cusecs

Outlets : head regulators in right and left flanks; capacity 35 cusecs each

6. Description of the canals

Kanholi Left Bank Canal (contour); 11 miles long; two seasonal; unlined ; capacity 35 cusecs

Kanholi Right Bank Canal (contour); 10 miles long; two seasonal; unlined; capacity 35 cusecs

7. (a) Nature of investigations carried out up-to-date

Present proposals based mainly on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District *Nagpur*

	Left Bank Canal	*Right Bank Canal*	*Total*
		thousand acres	
G.C.A.	4.2	4.3	8.5
C.C.A.	2.7	2.8	5.5
Deduct Area under wells			0.3
Net C.C.A.			5.2

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
	........*thousand acres*............	.........*percentage*......
Two seasonal	400 acres	7.7 percent
Kharif	2,000 ,,	38.5 ,,
Rabi	3,600 ,,	69.2 ,,
Total	**6,000 ,,**	**115.4 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
		..........*inches*..........		........*T.M.C.*......	
June	7.5	18.3	1.71		
July	13.0	26.2	5.18	15th June to 14th Oct.	
August	10.4	23.5	2.30	0.17	0.37
September	7.9	18.8	1.28		
October	2.1	9.5	Nil	15th Oct. to 14th Feb.	
November	0.6	7.4	,,	0.25	0.34
December	0.5	1.0	,,		
January	0.5	4.7	,,		
February	0.5	3.4	,,	15th Feb. to 14th June	
March	0.5	2.8	,,		
April	0.5	4.6	,,	Nil	
May	0.8	3.4	,,		
Total	**44.8**			**0.42**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam, silty loam to clayey loam, clayey loam to clay in proportion of 15 and percent 20 percent and 65 percent respectively

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Two seasonal*	
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*
Sugarcane Others etc.		*Sugarcane*	
1.8	0.1	1.8	0.1

continued below

continued from above

Kharif		*Rabi*		*Total cropped area (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy, Jowar, Pulses, etc.		*Wheat, Linseed, Others*		
72.7	4.0	23.7	1.3	5.5

15.(a) Proposed pattern of irrigated cultivation

Two seasonal		*Kharif*		*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Chillies, Pulses etc.		*Paddy*		*Wheat*	*Gram*		
6.7	0.4	33.3	2.0	26.7	33.3	3.6	6.0

(b) Are there any rules for regulating crop pattern ?

No; but sanctions will be regulated so as to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (*acres per mean cusec*)		*Delta* (*feet*)		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Two seasonal	200	130	1.2	1.9	3.1
Paddy	150	400	1.6	0.6	2.2
Gram	—	400	—	0.6	0.6
Wheat	—	150	—	1.6	1.6
Overall Delta at canal head			1.6 feet		

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

12 tanks; irrigating about 100 acres, excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

100 wells; irrigating 2 acres per well; area excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

670 acres (culturable area 536 acres; forests 67 acres; waste land 67 acres) in Maharashtra

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

LOWER WUNNA PROJECT 94C.3-G.8-M.19

1. Name of State Maharashtra (formerly in Madhya Pradesh)

2. Scope of the scheme or system

Irrigation scheme; flow-cum-storage; C.C.A. 139,840 acres

3. Source of supply

Wunna near Wargaon/Wardha/Pranhita/**Godavari**
Nand near Mannori/Wunna/Wardha/Pranhita/**Godavari**
Amghat Nalla near Borgaon Manjra/Nand/Wunna/Wardha/Pranhita/**Godavari**
Utilisation upstream:
existing : nil
proposed : Upper Wunna Project, utilisation 1.00 T.M.C.

4. Description of the reservoir or tank

	Wunna River	*Nand River*	*Amghat Nalla*
Live storage (T.M.C.)	10.60	0.97	0.52
Dead storage ,,	2.10	0.38	0.04
Carry-over ,,	1.20	Nil	Nil
Annual reservoir losses (T.M.C.)	2.90	0.20	0.15
Filling period	......15th June to end of Oct...............		
Depletion period	......1st Aug. to 14th June		
Catchment area (square miles)	370	154	19
Area submerged (acres)	12,800	3,390	800
Full reservoir level (R.L.)	840	810	866
Minimum pond level ,,	810	800	835

5. Description of the headworks

	Wunna River	*Nand River*	*Amghat Nalla*
Dam :	earthen; 11,600 feet long, and dykes 5,000 feet, 75 feet high	earthen; 6,500 feet long, 38 feet high	earthen; 1 mile long and dykes 1.5 miles long, 66 feet high;
Spillway:	waste weir, gated (10 number, 40 feet x 20 feet) capacity 134,000 cusecs	waste weir gated (6 number, 40 feet x 20 feet,) capacity 85,600 cusecs	waste weir about 400 feet long, capacity 25,570 cusecs
Outlets :	head regulator, left flank, capacity 1,250 cusecs	river sluice, capacity 200 cusecs	river sluice, capacity 200 cusecs

6. **Description of the canal**

Lower Wunna Canal (contour); left bank, 66 miles long; perennial; unlined; capacity **1,250 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

	Name of districts		*Total*
	Wardha	*Nagpur*	
G.C.A.	195.2	13.5	208.7
C.C.A.	130.0	10.0	140.0
Deduct area under well irrigation			0.16
Net C.C.A.			139.84

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	5,000 acres	3.6 percent
Two seasonal	5,000 „	3.6 „
Long staple cotton	20,000 „	14.3 „
Kharif	30,000 „	21.4 „
Rabi	50,000 „	35.7 „
Hot weather	10,000 „	7.2 „
Total	**120,000** „	**85.8** „

11. Normal rainfall and river supply proposed to be diverted

Month	Rainfall			River supply proposed to be diverted	Capacity fatctor
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*............			......*T.M.C.*......	
June	7.5	14.4	1.4	15th June to 14th Oct.	
July	13.3	23.9	8.0	4.11	0.31
August	10.5	23.8	2.0		
September	8.0	17.9	1.5		
October	2.1	7.3	Nil	15th Oct. to 14th Feb.	
November	0.5	3.9	,,		
December	0.5	2.0	,,	4.95	0.37
January	0.5	3.2	,,		
February	0.5	4.7	,,	15th Feb. to 14th June	
March	0.4	4.0	,,		
April	0.5	3.9	,,	4.56	0.35
May	0.6	2.0	,,		
Total	**44.9**			**13.62**	

12. Not available

13. (a) Charactristics of soils in the commanded area

Sandy to sandy loam 15 percent, sandy loam to clayey loam 65 percent and clayey loam to clay 20 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Two seasonal*	
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*
Others		*Chillies*	
0.7	1.0	0.7	1.0

continued below

continued from above

Kharif						*Rabi*				
Percentage of principal crops					*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T.acres)*	*Total cropped area (T. acres)*
Jowar	*Cotton*	*Pulses*	*Oil seeds*	*Others*		*Wheat*	*Lin-seed*	*Others*		
24.0	31.9	9.0	5.0	0.1	98.0	20.0	6.0	2.6	40.0	140.0

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Two seasonal*		*Long staple cotton*	
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*
Others		*Chillies, Pulses etc.*		*cotton*	
4.2	5.0	4.2	5.0	16.6	20.0

continued below

continued from above

Kharif		*Rabi*				*Hot weather*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Wheat*	*Jowar*	*Gram*		*Groundnut*		
25.0	30.0	12.5	12.5	16.7	50.0	8.3	10.0	120.0

(b) Are there any rules for regulating crop pattern ?

No; but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)			*Delta (feet)*			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Other perennial	120	100	75	2.0	2.4	3.2	7.6
Two seasonal	150	130	—	1.6	1.9	—	3.5
Long stapple cotton	400	—	100	0.6	—	2.4	3.0
Paddy	150	400	—	1.6	0.6	—	2.2
Gram	—	400	—	—	0.6	—	0.6
Wheat	—	150	—	—	1.6	—	1.6
Jowar	—	200	—	—	1.2	—	1.2
Groundnut	—	—	100	—	—	2.4	2.4

Overall delta at canal head 2.6 feet

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

About 80 wells; irrigating about 2 acres each, area excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. **Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns**

Nil

23. **Extent and type of area submerged by reservoir**

Details of area submerged	*Storage on*		
	Wunna River	*Nand River*	*Amghat Nalla*
	................*acres*..................		
Culturable area	9,600	2,720	80
Forests area	1,920	170	600
Waste lands	1,280	500	120
Total	**12,300**	**3,390**	**800**

entire submergence in Maharashtra

24. to 26. Not available

27. Not applicable

28. **Main features and purpose of the scheme**

Conversion of rain-fed cultivation to irrigated agriculture

DHAM PROJECT 95C.3-G.8-M.20

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

   Irrigation scheme ; flow-cum-storage; C.C.A. 16,800 acres

3. **Source of supply**

   Dham near Maha-Kali/Bor/Wunna/Wardha/Wainganga/Pranhita/**Godavari**

   Utilisation upstream:

   existing : nil

   proposed : nil

4. **Description of the reservoir or tank**

Live storage	1.72 T.M.C.
Dead storage	0.25 ,,
Carry-over	Nil
Annual reservoir losses	0.16 T.M.C.
Filling period	15ht June to end of Oct.
Depletion period	1st Aug. to 14th Feb.
Catchment area	140 square miles
Area submerged	1,500 acres
Full reservoir level	R.L. 1,052
Minimum pond level	R.L. 1,009

5. **Description of the headworks**

   Dam : earthen; 5,200 feet long, 83 feet high

   Spillway : masonry waste weir; 1,850 feet long, capacity 81,700 cusecs

   Outlets : head regulator in left-flank; capacity 270 cusecs

6. **Description of the canal**

   Dham canal (contour); left bank; 15 miles long; two seasonal; unlined; capacity; **270 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

   Present proposals based mainly on topo-sheet studies

   (b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Wardha

G.C.A.	23,000 acres
C.C.A.	17,000 ,,
Deduct irrigation under wells	200 ,,
Net C.C.A.	16,800 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	12,000 acres	71.4 percent
Rabi	14,000 ,,	83.3 ,,
Total	**26,000** ,,	**154.7** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*....	....	....	.........*T.M.C.*.........	
June	6.7	18.3	1.7		
July	11.7	26.2	5.2	1st Aug. to 14th Oct.	
August	9.5	23.5	2.3	0.87	0.50
September	7.8	18.8	1.3		
October	2.2	9.4	Nil		
November	0.6	7.4	,,	15th Oct. to 14th Feb.	
December	0.4	1.0	,,	1.12	0.39
January	0.5	4.7	,,		
February	0.4	3.4	,,	15th Feb. to 31st July	
March	0.4	2.8	,,		
April	0.4	4.6	,,	Nil	
May	0.8	3.4	,,		
Total	**41.4**			**1.99**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 15 percent; sandy loam to clayey loam 65 percent and clayey loam to clay 20 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Kharif*					*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops	*Total area (T.acres)*	*Percentage of principal crops*				*Total area (T.acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Others		*Cotton*	*Jowar*	*Pulses*	*Others*		*Wheat*	*Others*		
0.6	0.1	38.0	35.0	12.0	4.4	15.2	8.4	1.6	1.7	17.0

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*			*Grand total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy		*Wheat*	*Gram*		
46.2	12.0	30.8	23.0	14.0	26.0

(b) Are there any rules for regulating crop-pattern ?

No; but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	150	400	1.6	0.6	2.2
Wheat	—	150	—	1.6	1.6
Gram	—	400	—	0.6	0.6

Overall delta at canal head 1.8 feet

17. (a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

Nil

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

110 wells, irrigating 2 acres per well, area excluded from the C.C.A.

18. **Quantum of river supplies available in relation to withdrawals**

River supply data not available

19. to 21. Not applicable

GENERAL

22. **Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns**

Nil

23. **Extent and type of area submerged by reservoir**

1,500 acres (culturable 600 acres; forests 750 acres; waste land 150 acres) in Maharashtra

24. to 26. Not available

27. Not applicable

28. **Main features and purpose of the scheme**

Conversion of rain-fed cultivation to irrigated agriculture

CHARGAON PROJECT

96C.3-G.8-M.21

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

Irrigation scheme ; flow-cum-storage ; C.C.A. 14,900 acres

3. **Source of supply**

Chargaon Nalla Erai/ Wardha/Pranhita/**Godavari**

Utilisation upstream:
existing : nil
proposed : nil

4. **Description of the reservoir or tank**

Live storage	0.90 T.M.C.
Dead storage	0.12 ,,
Carry-over	Nil
Annual reservoir losses	0.22 T.M.C.
Filling period	14th June to Oct.
Depletion period	1st Aug. to end of Nov.
Catchment area	51 square miles
Area submerged	2,060 acres
Full reservoir level	R.L. 762
Minimum pond level	R.L. 745

5. **Description of the headworks**

Dam : earthen; 7,700 feet long; 42 feet high
Spillway : masonry waste weir; 1,600 feet long; capacity 48,300 cusecs
Outlets : head regulator, right flank, capacity 235 cusecs

6. **Description of the canal**

Chargaon Canal (contour); right bank; 17 miles long; two seasonal; unlined; capacity **235 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Present proposal based largely on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Wardha

G.C.A.	22,600 acres
C.C.A.	16,000 ,,
Deduct existing tank and well irrigation	1,100 ,,
Net C.C.A.	14,900 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	9,200 acres	61.7 percent
Rabi	9,200 ,,	61.7 ,,
Total	**18,400 ,,**	**123.4 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	...........*inches*..............			......*T.M.C.*......	
June	7.5	17.7	1.9		
July	14.8	28.1	6.7	1st Aug. to 14th Oct.	
August	11.3	21.1	4.0	0.51	0.33
September	8.0	17.3	1.7		
October	1.9	11.3	Nil	15th Oct. to end of Nov.	
November	0.5	6.0	,,	0.51	0.53
December	0.3	2.6	,,		
January	0.4	1.9	,,		
February	0.7	3.3	,,	1st Dec. to 31st July	
March	0.8	3.3	,,		
April	0.7	3.3	,,	Nil	—
May	0.8	2.5	,,		
Total	**47.7**			**1.02**	

12. · **Not available**

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 25 percent, sandy loam to clayey loam 40 percent and clayey loam to clay 35 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Two seasonal		*Kharif*						*Rabi*					*Total cropped area (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*					*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*	
Others		*Paddy*	*Pulses*	*Jowar*	*Cotton*	*Others*		*Wheat*	*Jowar*	*Linseed*	*Others*		
3.1	0.5	8.5	8.0	8.6	8.6	12.5	7.4	14.2	24.4	10.4	1.6	8.1	16.0

15.(a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Grand Total (T. acres)*
Paddy		*Gram*		
50.0	9.2	50.0	9.2	18.4

(b) Are there any rules for regulating crop pattern ?

No; but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Padddy	200	400	1.2	0.6	1.8
Gram	—	400	—	0.6	0.6
Overall delta at canal head			1.3 feet		

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

100 small tanks, irrigating 1,000 acres, excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

50 wells, irrigating about 2 acres, each excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power ; water supply (month-wise), if any, required for these aspects ; financial returns

Nil

23. Extent and type of area submerged by reservoir

2,060 acres (culturable 1,650 acres; forest 100 acres; waste land 310 acres) in Maharashtra

24. to 26. Not available.

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrrigated agriculture

CHANDAI PROJECT

97C.3-G.9-M.22

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 8,300 acres

3. **Source of supply**

Chandai near Bembla/Erai/Wardha/Pranhita/**Godavari**
Utilisation upstream :
existing : nil
proposed : nil

4. **Description of the reservoir or tank**

Live storage	0.60 T.M.C.
Dead storage	0.08 ,,
Carry-over	Nil
Annual reservoir losses	0.17 T.M.C.
Filling period	15th June to Oct.
Depletion period	1st Aug. to end of Nov.
Catchment area	31 square miles
Area submerged	1,560 acres
Full reservoir level	R.L. 765
Minimum pond level	R.L. 750

5. **Description of the headworks**

Dam : earthen, 5,000 feet long, 40 feet high
Spillway : masonry waste weir, 1,300 feet long, capacity 36,500 cusecs
Outlets : head regulator in left flank, capacity 120 cusecs

6. **Description of the canal**

Chandai Canal (contour) ; left bank; 15 miles long; two seasonal; unlined; capacity **120 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Present proposal based largely on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Chanda

G.C.A.	12,500 acres
C.C.A.	9,000 ,,
Deduct existing tank and well irrigation	700 ,,
Net C.C.A.	8,300 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	5,600 acres	67.5 percent
Rabi	5,600 ,,	67.5 ,,
Total	**11,200 ,,**	**135.0 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*............			......*T.M.C.*......	
June	7.5	17.7	1.9		
July	14.5	25.1	6.7	1st Aug. to 14th Oct.	
August	11.3	21.4	4.0	0.31 0.40	
September	8.0	17.3	1.7		
October	1.9	11.2	Nil	15th Oct. to end Nov.	
November	0.5	6.0	,,	0.31 0.64	
December	0.3	2.6	,,		
January	0.4	1.9	,,	1st Dec. to 31st July	
February	0.7	3.3	,,	Nil —	
March	0.8	3.3	,,		
April	0.7	3.3	,,		
May	0.8	2.5	,,		
Total	**47.4**			**0.62**	

12. Not available

13. (a) **Characteristics of soils in the commanded area**

Sandy to sandy loam 25 percent, sandy loam to clayey loam 40 percent and clayey loam to clay 35 percent

(b) **Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?**

No

14. **Existing pattern of cultivation in the area proposed to be irrigated**

Two seasonal			*Kharif*						*Rabi*					*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*					*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*	
Chillies	*Others*		*Paddy*	*Pulses*	*Jowar*	*Cotton*	*Oilseeds*		*Wheat*	*Jowar*	*Linseed*	*Others*		
3.3		0.3	8.7	8.5	8.2	8.7	12.6	4.2	14.0	24.3	10.2	1.5	4.5	9.0

15. (a) **Proposed pattern of irrigated cultivation**

Kharif		*Rabi*		*Grand total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Gram*		
50.0	5.6	50.0	5.6	11.2

(b) **Are there any rules for regulating crop pattern ?**

No, but sanctions will be regulated to conform to the proposed crop pattern

16. **Duty and Delta at distributory head (as anticipated)**

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	200	400	1.2	0.6	1.8
Gram	—	400	—	0.6	0.6

Overall delta at canal head 1.3 feet

17. (a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

60 tanks; irrigating 600 acres, area excluded from the C.C.A.

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

30 wells; irrigating about 2 acres per well, area excluded from the C.C.A.

18. **Quantum of river supplies available in relation to withdrawals**

River supply data not available

19. **to 21.** Not applicable

GENERAL

22. **Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects ; financial returns**
    Nil

23. **Extent and type of area submerged by reservoir**
    1,560 acres (culturable 624 acres; forests 780 acres; and waste land 156 acres) in Maharashtra

24. to 26. Not available

27. Not applicable

28. **Main features and purpose of the scheme**
    Conversion of rain-fed cultivation to irrigated agriculture

DONGARGAON PROJECT

98C.3-G.7-M.23

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**
   Irrigation scheme; flow-cum-storage; C.C.A. 86,900 acres

3. **Source of supply**
   Penganga near Dongargaon/Wardha/Penganga/Pranhita/**Godavari**
   Utilisation upsteam: nil

4. **Description of the reservoir or tank**

Live storage	17.30 T.M.C.
Dead storage	2.80 ,,
Carry-over	Nil
Annual reservoir losses	2.50 T.M.C.
Filling period	15th June to Oct.
Depletion period	15th June to 14th June
Catchment area	1,751 square miles
Area submerged	13,600 acres
Full reservoir level	R.L. 1,435
Minimum pond level	R.L. 1,391

5. **Description of the headworks**
   Dam : earthen, 5,230 feet long, 111 feet high
   Spillway : masonry 800 feet long, 55 feet high, capacity 293,000 cusecs
   Outlets : head regulators in right and left flanks, capacity 403 and 1,130 cusecs respectively
   river sluice 2,000 cusecs

6. **Description of the canals**
   Dongargaon Left Bank Canal (contour); 53 miles long; (when it falls into Ningnur Nalla and from a pick up weir about 6 miles down-stream on this Nalla two other canals take off with a total capacity of 504 cusecs) two seasonal; unlined; authorised capacity **1,130 cusecs**
   Dongargaon Right Bank Canal (contour); 24 miles long; two-seasonal; unlined; capacity **403 cusecs**

7. (a) **Nature of investigations carried out up-to-date**
   Investigations in progress
   (b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise (both canals)

	Names of districts			*Total*
	Yeotmal	*Parbhani*	*Nanded*	
	........*thousand acres*........			
G.C.A.	95.1	2.1	23.5	120.7
C.C.A.	64.3	1.8	21.2	87.3
Existing well irrigation				0.4
Net C.C.A.				86.9

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	64,000 acres	73.5 percent
Rabi	34,000 „	39.1 „
Total	**98,000 „**	**112.6 „**

11. Normal rainfall and river supply proposed to be diverted (both canals)

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor of 1,533 cusecs for all canals*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*..........			......*T.M.C*..........	
June	7.0	15.1	0.3		
July	12.0	21.3	2.3	15th June to 14th Oct.	
August	9.0	21.4	1.2	5.10	0.32
September	7.5	15.7	0.8		
October	2.0	12.2	Nil		
November	0.6	3.8	„	15th Oct. to end of Nov.	
December	0.3	2.3	„	3.10	0.49
January	0.4	3.6	„		
February	0.5	4.3	„		
March	0.5	6.0	„	1st Dec. to 14th June	
April	0.5	3.7	„	Nil	—
May	0.6	10.9	„		
Total	**40.9**			**8.20**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 15 percent, sandy loam to clayey loam 40 percent and clayey loam to clay 45 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*			*Kharif*				
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*
Sugarcane	*Others*		*Cotton*	*Others*		*Jowar*	*Pulses*	*Paddy*	*Others*	
0.1	0.8	0.8	35.4	1.2	31.9	38.6	11.4	2.4	4.4	49.6

continued below

continued from above

Rabi			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	
Wheat	*Others*		
3.5	2.2	5.0	87.3

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Gram*		
65.4	64.0	34.6	34.0	98.0

(b) Are there any rules for regulating crop pattern ?

No; but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	150	400	1.6	0.6	2.2
Gram	—	400	—	0.6	0.6

Overall delta at canal head 2.0 feet

17. (a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

Nil

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

180 wells; irrigating 2 acres per well, area excluded from the C.C.A.

18. **Quantum of river supplies available in relation to withdrawals**

River supply data not available

19. to 21. Not applicable

GENERAL

22. **Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns**

Nil

23. **Extent and type of area submerged by reservoir**

13,600 acres (culturable 10,500 acres, forests 2,400 acres and waste land 700 acres) all in Maharashtra

24. to 26. Not available

27. Not applicable

28. **Main features and purpose of the scheme**

Conversion of rain-fed cultivation to irrigated agriculture

PENGANGA IRRIGATION PROJECT

99C.3-G.7-M.24

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

   Irrigation scheme; flow-cum-storage; C.C.A. 260,600 acres

3. **Source of supply**

   Penganga at Chikhalwardha/Wardha/Pranhita/**Godavari**
   Aran at Ratnapur/Penganga/Wardha/Pranhita/**Godavari**
   Kuni at Lingti /Penganga/Wardha/Pranhita/**Godavari**
   This project will also recieve 25.2 T.M.C. from the tail-race of Penganga Project **(8C.2-G.7-M.2)**

   Utilisation upstream :
   existing : nil
   proposed : 8 major and medium projects

4. **Description of the reservoir or tank**

		Ratnapur storage on Aran	*Chikhalwardha pick-up weir on Penganga*
Live storage	(T.M.C.)	18.00	1.00
Dead storage	„	2.00	0.40
Carry-over	„	2.40	0.20
Annual reservoir losses	(T.M.C.)	3.90	—
Filling period		15th June to end of Oct.	—
Depletion period		1st Oct. to 14th June	15th June to 14th June
Catchment area	(square miles)	1,712	6,815
Area submerged	(acres)	18,900	3,200
Full reservoir level	(R.L.)	910	815
Minimum pond level	„	865	800

5. Description of the headworks

	Ratnapur storage on Aran	*Chikhalwardha pick-up weir on Penganga*
Dam :	earthen, 2,000 feet long, 105 feet high,	
Spillway :	masonry, 3,000 feet long, capacity 290,000 cusecs	masonry, 4,000 feet long, 30 feet high, 80 gated, 40 feet x 15 feet each, total capacity 578,000 cusecs
Outlets :	river sluice capacity 3,500 cusecs	head regulator in left flank, capacity 4,500 cusecs

In addition there will be a pick-up weir on Kuni river and another on Aran river from where Feeder Canals will take off to fall into the Penganga Canal in its head reach

6. Description of the canal

Penganga Canal (contour); left bank; 160 miles long; perennial; unlined; authorised capacity **4,500 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Investigations in progress; present proposals largely based on topo-sheet studies

(b) **Actual or probable date of beginning of construction** IV Plan

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

	Names of districts		*Total*
	Yeotmal	*Chanda*	
	........*thousand acres*.............		
G.C.A.	248.7	146.7	395.4
C.C.A.	150.0	116.0	266.0
Deduct area under existing well and tank irrigation			5.4
Net C.C.A.			260.6

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated		*Intensity of irrigation*	
Perennial	15,000	acres	5.7	percent
Two seasonal	10,000	,,	3.8	,,
Long staple cotton	50,000	,,	19.2	,,
Kharif (Paddy)	125,000	,,	48.0	,,
Rabi	150,000	,,	57.6	,,
Hot weather	25,000	,,	9.6	,,
Total	**375,000**	,,	**143.9**	,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	...............*inches*...............			.........*T.M.C.*.........	
June	7.1	17.2	1.7	1st Aug. to 14th Oct.	
July	14.2	27.1	3.6		
August	11.1	19.2	3.4	11.80	0.25
September	8.0	17.9	0.8		
October	1.7	9.7	Nil		
November	0.5	5.9	,,	15th Oct. to 14th Feb.	
December	0.3	0.7	,,		
January	0.4	1.9	,,	18.60	0.39
February	0.6	5.1	,,	15th Feb. to 14th June	
March	0.7	4.3	,,		
April	0.5	7.3	,,	15.24	0.33
May	0.7	7.2	,,		
Total	**45.8**			**45.64**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 12 percent; sandy loam to clayey loam 28 percent; clayey loam to clay 60 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*		*Kharif*							*Rabi*					*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*						*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*	
Sugar-cane	*Others*		*Chillies*		*Paddy*	*Oil-seeds*	*Pulses*	*Jowar*	*Cotton*	*Others*		*Jowar*	*Wheat*	*Linseeds*	*Others*		
0.02	0.18	0.05	1.6	4.3	6.5	5.0	6.0	23.5	20.0	7.0	180.9	13.6	7.0	6.6	3.0	80.3	266.0

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Two seasonal*			*Kharif*		*Rabi*				*Hot weather*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane plantain		*Chillies,*	*Long staple cotton*		*Paddy*		*Wheat*	*Jowar*	*Gram*		*Groundnut*		
4.0	15.0	2.7	13.3	60.0	33.3	125.0	13.3	20.0	6.7	150.0	6.7	25.0	375.0

(b) Are there any rules for regulating crop pattern ?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty *(acres per mean cusec)*			*Delta* *(feet)*			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Sugarcane/ Plantain	120	70	50	2.0	3.5	4.8	10.3
Two seasonal	200	130	—	1.2	1.9	—	3.1
Long staple cotton	—	—	100	—	—	2.4	2.4
Paddy	200	400	—	1.2	0.6	—	1.8
Wheat	—	150	—	—	1.6	—	1.6
Gram	—	400	—	—	0·6	—	0.6
Jowar	—	200	—	—	1.2	—	1.2
Groundnut	—	—	100	—	—	2.4	2.4

Overall delta at canal head 2.8 feet

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

500 tanks; irrigating about 5,000 acres, excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

200 wells, irrigating 2 acres each, area excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Details of submergence	*Aran storage*	*Chikhalwardha weir*
Culturable	9,450 acres	2,240 acres
Forests	5,670 ,,	480 ,,
Waste land	3,780 ,,	480 ,,
Total	18,900 ,,	3,200 ,,

The entire submergence would lie in Maharashtra

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

PIMPRI BARWAT PROJECT

100C.3-G.7-M.25

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

Irrigation scheme ; flow-cum-storage ; C.C.A. 31,200 acres

3. **Source of supply**

Aran near Pimpri Barwat/Penganga/Wardha/Pranhita/**Godavari**

Utilisation upstream :

existing : nil

proposed : 0.6 T.M.C.

4. **Description of the reservoir or tank**

Live storage	2.00 T.M.C.
Dead storage	0.30 ,,
Carry-over	Nil
Annual reservoir losses	0.80 T.M.C.
Filling period	15th June to end of Oct.
Depletion period	15th June to 14th Feb.
Catchment area	255 square miles
Area submerged	3,300 acres
Full reservoir level	R.L. 1,268
Minimum pond level	R.L. 1,241

5. **Description of the headworks**

Dam : earthen, 3,800 feet long, 81 feet high

Spillway : masonry, 460 feet long, 75 feet high; capacity 111,000 cusecs

Outlets : head regulators in left and right flanks, capacity 40 cusecs and 110 cusecs respectively

6. **Description of the canals**

Pimpri Barwat Left Bank Canal (contour) ; 21 miles long ; two seasonal ; unlined; capacity **40 cusecs**

Pimpri Barwat Right Bank Canal (contour) ; 37 miles long ; two seasonal ; unlined; capacity **110 cusecs**

7. **(a) Nature of investigations carried out up-to-date**

Present proposals based mainly on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

	Names of districts				*Total*
	Akola		*Yeotmal*		
	Left Bank Canal	*Right Bank Canal*	*Left Bank Canal*	*Right Bank Canal*	
	thousand acres				
G.C.A.	1.4	1.0	8.3	34.3	45.0
C.C.A.	1.0	0.7	5.8	24.0	31.5
Existing well irrigation					0.3
Net C.C.A.					31.2

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Two seasonal	4,000 ,,	12.8 percent
Kharif	22,000 acres	70.5 ,,
Rabi	16,000 ,,	51.3 ,,
Total	**42,000 ,,**	**134.6** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	inches			*T.M.C.*	
June	6.0	18.4	0.4	15th June to 14th Oct.	
July	10.0	24.3	1.2		
August	7.5	18.4	0.7	0.90	0.57
September	6.0	16.9	0.1		
October	1.5	9.7	Nil	15th Oct. to 14th Feb.	
November	0.8	6.9	,,		
December	0.5	6.5	,,	1.60	1.00
January	0.4	3.2	,,		
February	0.3	3.5	,,	15th Feb. to 14th June	
March	0.4	6.0	,,		
April	0.3	5.0	,,	Nil	—
May	0.6	4.0	,,		
Total	**34.3**			**2.50**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 15 percent, sandy loam to clayey loam 40 percent and clayey loam to clay 45 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristicts ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Two seasonal*		
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*
Others		*Cotton*	*Others*	
0.6	0.2	39.6	1.0	12.8

continued below

continued from above

Kharif					*Rabi*			*Total cropped area (T. acres)*
Percentage of principal crops				*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Jowar	*Pulses*	*Groundnut*	*Others*		*Wheat*	*Others*		
33.9	9.8	10.6	3.2	18.1	1.0	0.3	0.4	31.5

15. (a) Proposed pattern of irrigated cultivation

Two seasonal		*Kharif*			*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Chillies, pulses etc.		*Jowar*	*Green manures*		*Wheat*		
9.5	4.0	14.2	38.2	22.0	38.1	16.0	42.0

(b) Are there any rules for regulating crop pattern ?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Two seasonal	160	130	1.5	1.9	3.4
Kharif	400	—	0.6	—	0.6
Rabi	—	150	—	1.6	1.6

Overall delta at canal head 1.4 feet

17. (a) Numbre of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

124 wells, irrigating about 2 acres per well, excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power ; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

3,300 acres (cultivable 2,300 acres, forests and waste 1,000 acres) entire submergence within Maharashtra

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Converstion of rain-fed cultivation to irrigated agriculture

AR PROJECT

101C.3-G.7-M.26

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

   Irrigation scheme ; flow-cum-storage ; C.C.A. 27,200 acres

3. **Source of supply**

   Ar near Chirkuta/Aran/Penganga/Wardha/Pranhita/**Godavari**
   Utilisation upstream: nil

4. **Description of the reservoir or tank**

Live storage	3.47 T.M.C.
Dead storage	0.58
Carry-over	Nil
Annual reservoir losses	0.96 T.M.C.
Filling period	15th June to end of Oct.
Depletion period	15th June to 14th Feb.
Catchment area	362 square miles
Area submerged	5,980 acres
Full reservoir level	R.L. 1,070
Minimum pond level	R.L. 1,045

5. **Description of the headworks**

Dam :	earthen, 15,680 feet long, 63 feet high
Spillway .	masonry, 380 feet long, 46 feet high, capacity 132,400 cusecs
Outlets :	head regulators in right and left flanks, capacity 186 cusecs and 114 cusecs respectively

6. **Description of the canals**

   Ar Left Bank Canal (contour): 19 miles long; two seasonal; unlined; capacity **114 cusecs**

   Ar Right Bank Canal (contour); 31 miles long; two seasonal; unlined; capacity **186 cusecs**

7 (a) **Nature of investigations carried out up-to-date**

   Investigations in progress; present proposal based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise (both canals)

District Yeotmal

G.C.A.	36,500	acres
C.C.A.	27,400	,,
Existing well irrigation	200	,,
Net C.C.A.	27,200	,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Two seasonal	12,600 acres	46.3 percent
Rabi	14,000 ,,	51.5 ,,
Total	**26,600 ,,**	**97.8 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	........*inches*..........			........*T.M.C.*..........	
June	6.0	18.5	Nil	15th June to 14th Oct.	
July	9.0	18.2	1.3		
August	8.5	16.1	1.2	0.90	0.28
September	7.0	15.8	Nil		
October	1.5	5.5	,,	15th Oct. to 14 Feb.	
November	0.5	8.5	,,	1.83	0.57
December	0.4	3.3	,,		
January	0.4	2.9	,,		
February	0.4	4.1	,,	15th Feb. to 14th June	
March	0.5	3.1	,,		
April	0.4	4.3	,,	Nil	—
May	0.6	3.7	,,		
Total	**35.2**			**2.73**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 10 percent, sandy loam to clayey loam 40 percent and clayey loam to clay 50 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*			*Kharif*				
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*
Sugarcane	*Others*		*Cotton*	*Others*		*Jowar*	*Pulses*	*Groundnut*	*Others*	
0.2	0.9	0.3	39.8	0.7	11.1	33.9	9.9	10.6	2.9	15.7

continued below

continued from above

Rabi			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	
Wheat	*Gram*		
0.7	0.4	0.3	27.4

15. (a) Proposed pattern of irrigated cultivation

Two seasonal		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Chillies, pulses etc.		*Jowar*		
47.4	12.6	52.6	14.0	26.6

(b) Are there any rules for regulating crop pattern ?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Karif	*Rabi*	*Kharif*	*Rabi*	*Total*
Two seasonal	160	140	1.5	1.8	3.3
Rabi	—	200	—	1.2	1.2

Overall delta at canal head 2.4 feet

7. (a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

Nil

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

104 wells, irrigating 2 acres per well, area excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

1.5 T.M.C. of stored water is proposed to be utilised on Penganga Irrigation Project

23. Extent and type of area submerged by reservoir

5,980 acres (culturable 4,480 acres; forests 1,200 acres; waste lands 300 acres) in Maharashtra

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

WAGHARI PROJECT

102C.3-G.7-M. 27

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage ; C.C.A. 22,700 acres

3. **Source of supply**

Waghari near Yelbara/Penganga/Wardha/Pranhita/**Godavari**
Utilisation upstream : nil

4. **Description of the reservoir or tank**

Live storage	1.05 T.M.C.
Dead storage	0.10 ,,
Carry-over	Nil .
Annual reservoir losses	0.15 T.M.C.
Filling period	15th June to end of Oct.
Depletion period	15th June to 14th Feb.
Catchment area	96 square miles
Area submerged	1,400 acres
Full reservoir level	R.L. 1,032
Minimum pond level	R.L. 1,002

5. **Description of the headworks**

Dam : earthen ; 3,300 feet long, 59 feet high
Spillway : 300 feet long; 55 feet high; capacity 67,520 cusecs
Outlets : head regulators in left and right flanks, capacity 130 cusecs and 50 cusecs respectively

6. **Description of the canals**

Waghari Left Bank Canal (contour) ; 22 miles long; two-seasonals; unlined; capacity **130 cusecs**

Waghari Right Bank Canal (contour); 13 miles long; two-seasonal; unlined; capacity **50 cusecs**

7. **(a) Nature of investigations carried out up-to-date**

Present proposals based entirely on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Yeotmal

G.C.A.	32,500 acres
C.C.A.	22,700 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Two seasonal	9,000 acres	39.6 percent
Kharif	6,200 ,,	27.3 ,,
Rabi	7,500 ,,	33.1 ,,
Total	**22,700** ,,	**100.0** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	......*inches*......			....*T.M.C.*....	
June	6.0	23.9	0.6		
July	9.0	29.7	2.9	15th June to 14th Oct.	
August	9.0	20.5	2.9	0.80	0.42
September	7.0	28.0	0.4		
October	1.5	11.0	Nil	15th Oct. to 14th Feb.	
November	0.5	7.4	,,	1.25	0.65
December	0.4	13.6	,,		
January	0.4	3.4	,,		
February	0.4	3.2	,,	15th Feb. to 14th June	
March	0.5	3.8	,,	Nil	
April	0.4	5.6	,,		—
May	0.6	5.7	,,		
Total	**35.7**			**2·05**	

12. Not available

13 (a) Characteristics of soils in the commanded area

Sandy to sandy loam 15 percent, sandy loam to clayey loam 40 percent and clayey loam to clay 45 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Two seasonal*			*Kharif*				*Rabi*			
Percentage of principal crops	*Total area (T. acres)*	*Percentage of Principal crops*		*Total area T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*		*Toral area (T. acres*	*Total cropped area (T. acres)*
Others		*Cotton*	*Others*		*Jowar*	*Pulses*	*Others*		*Wheat*	*Others*		
0.4	0.1	41.9	1.3	9.8	37.9	11.5	4.8	12.3	1.8	0.4	0.5	22.7

15. (a) Proposed pattern of irrigated cultivation

Two seasonal		*Kharif*		*Rabi*		
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Totat area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Grand Total (T. acres)*
Chillies, pulses etc.		*Jowar and Groundnut*		*Wheat*		
39.7	9.0	27.3	6.2	33.0	7.5	22.7

(b) Are there any rules for regulating crop pattern ?

No; but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Two seasonal	160	140	1.5	1.8	3.3
Kharit	400	—	0.6	—	0.6
Rabi	—	150	—	1.6	1.6

Overcall delta at canal head 2.1 feet

17. (a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

Nil

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

30 wells; irrigating 2 acres per well (negligible)

18. **Quantum of river supplies available in relation to withdrawals**

River supply data not available

19. to 21. Not applicable

GENERAL

22. **Aspects other than irrigation and power ; water supply (month-wise), if any, required for these aspects; financial returns**

Nil

23. **Extent and type of area submerged by reservoir**

1,400 acres. (culturable, 1,000 acres; forest 300 acres and waste lands 100 acres); in Maharashtra

24. to 26. Not available

27. Not applicable

28. **Main features and purpose of the scheme**

Conversion of rain-fed cultivation to irrigated agriculture

LOWER WAIN GANGA PROJECT

103C.3-G.9-M.28

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)
2. **Scope of the scheme or system**

   Irrigation scheme; flow-cum-storage; C.C.A. 147,200 acres; storages in Madhya Pradesh, canal in Maharashtra
3. **Source of supply**

   Deo near Kundal Bagh/Wainganga/Pranhita/**Godavari**

   Son near Baigatala/Bagh/Wainganga/Pranhita/**Godavari**

   Wainganga near Mandwi/Pranhita/**Godavari**

   Considerable utilisation upstream both existing and proposed
4. **Description of the reservoir or tank**

	Deo River	*Son River*
Live storage (T.M.C.)	5.15	9.22
Dead storage ,,	0.23	0.43
Carry-over ,,	Nil	Nil
Annual reservoir losses (T.M.C.)	0.27	0.87
Filling period	15th June to Oct.	15th June to Oct.
Depletion period	1st Dec. to 14th Feb.	1st Dec. to 14th Feb.
Catchment area (square miles)	192	342
Area submerged (acres)	1,230	4,220
Full reservoir level (R.L.)	1,200	1,276
Minimum pond level ,,	1,050	1,180

5. **Description of the headworks**

	Deo River	*Son River*	*Barrage on wainganga River*
Dam :	masonry 3,000 feet long, 175 feet high	masonry 2,600 feet long, 160 feet high	masonry, gated weir 4,000 feet long, 40 feet high
Spillway :	central 1,700 feet long, capacity 97,000 cusecs	central 2,260 feet long, capacity 129,500 cusecs	clear ovefall type weir, 115 gates, each 30 feet x 15 feet, total capacity 591,000 cusecs
Outlets :	sluices for releasing water into stream, capacity 3,500 cusecs	sluices for releasing water into stream, capacity 3,500 cusecs	head regulator in left flank capacity 3,500 cusecs

6. **Description of the canal**

   Lower Wainganga Canal (contour): left bank; 80 miles long; two seasonal; unlined capacity **3,500 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Present proposals based largely on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

District Bhandara

G.C.A.	178,500 acres
C.C.A	150,000 „
Deduct area irrigated by tanks and wells ?	2,800 „
Net C.C.A.	147,200 „

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area propos.d to be irrigated	*Intensity of irrigation*
Kharif	120,000 acres	81.5 percent
Rabi	120,000 „	81.5 „
Total	**240,000 „**	**163.0 „**

11. **Normal rainfall and river supply proposed to be diverted**

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*............			........*T.M.C*.........	
June	8.0	15.7	1.5	1st Aug. to 14th Oct.	
July	16.0	40.3	8.9		
August	15.0	28.6	7.8	7.84	0.21
September	8.4	19.5	2.2		
October	1.7	12.0	Nil		
November	0.4	2.2	„	15th Oct. to 14th Feb.	
December	0.3	1.0	„	11.20	0.30
January	0.5	3.9	„		
February	0.8	5.6	„	15th Feb. to 31st July	
March	0.4	6.2	„		
April	0.4	5.9	„	Nil	—
May	0.5	9.4	„		
Total	**52.4**			**19.04**	

12. Not available

13. (a) **Characteristics of soils in the commanded area**

Sandy to sandy loam 18 percent, sandy loam to clayey loam 32 percent and clayey loam to clay 50 percent

(b) **Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?**

No

14. **Existing pattern of cultivation in the area proposed to be irrigated**

Perennial		*Two seasonal*		*Kharif*				
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentag of principal crops*				*Total area (T. acres)*
Others		*Others*		*Paddy*	*Pulses*	*Oil-seeds*	*Others*	
0.5	0.8	1.7	2.5	38.0	7.0	6.0	3.0	81.0

continued below

continued from above

Rabi					*Total cropped area (T. acres)*
Percentage of principal crops				*Total area (T. (acres)*	
Wheat	*Jowar*	*Pulses & Grams*	*Others*		
10.0	20.0	13.0	0.8	65.7	150.0

15. (a) **Propsed pattern of irrigated cultivation**

Kharif		*Tabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy		*Wheat*	*Gram*		
50.0	120.0	25.0	25.0	120.0	240.0

(b) **Are there any rules for regulating crop pattern ?**

No, but sanctions will be regulated to conform to the proposed crop pattern

16. **Duty and Delta at distributory head (as anticipated)**

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	200	400	1.2	0.6	1.8
Wheat	—	150	—	1.6	1.6
Gram	—	400	—	0.6	0.6

Overall delta at canal head

1.8 feet

17. (a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

1,600 small tanks, irrigating about 1,600 acres, area excluded from the C.C.A.

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

600 wells, irrigating about 2 acres each ; area excluded from C.C.A.

18. **Quantum of river supplies available in relation to withdrawals**

River supply data not available

19. to 21. Not applicable

GENERAL

22. **Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects financial returns**

Nil

23. **Extent and type of area submerged by reservoir**

Submergence	*Storage on Deo River*	*Storage on Son River*	*Barrage on Wainganga*
Culturable area	246 acres	844 acres	700 acres in Maharashtra, and 250 acres in Madhya Pradesh, 1,800 acres in Maharashtra
Forest area	984 ,,	3,376 ,,	
Waste land	—	—	
Total	1,230 acres in Madhya Pradesh	4,220 acres in Madhya Pradesh	

24. to 26. Not available

27. Not applicable

28. **Main features and purpose of the scheme**

Conversion of rain-fed cultivation to irrigated agriculture

PRANHITA PROJECT

104C.3-G.9-M.29

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**
   Hydro-electric scheme; flow-cum-storage; power 217,000 kW. installed

3. **Source of supply**
   Wainganga at (i) Garhchiboli (ii) Samda (iii) Ghargaon and
   (iv) Pipri/Pranhita/Godavari/and Pranhita at Watra budruk/**Godavari**

4. **Description of the reservoir or tank**

	Dam on wainganga near Gadhchiroli	*Pick-up-weir at*			*Dam on Pranhita at Watra-budruk*
		Samda	*Ghargaon*	*Pipri*	
Live storage (T.M.C.)	95.30	Nil	Nil	Nil	69.6
Dead storage ,,	50.50	4.70	9.10	4.20	119.40
Carry-over	Nil	Nil	Nil	Nil	Nil
Annual reservoir losses (T.M.C.)	40.00	2.50	4.00	2.00	36.30
Filling period	15th June to end of Oct.	—	—	—	15th June to end Oct.
Depletion period	1st July to 30th June	—	—	—	1st July to 30th June
Catchment area (square miles)	17,883	17,953	18,591	18,732	38,688
Area submerged (acres)	179,200	7,300	17,900	5,700	121,600
Full reservoir level (R.L.)	700	639	600	560	473
Minimum pond level ,,	680	—	—	—	460

5. **Description of the headworks**

	Dam on wainganga near Gadhchiroli	*Pick-up-weir site at*			*Dame on Pranhita at Watra budruk*
		Samda	*Ghargaon*	*Pipri*	
Dam weir:	masonry portion in the gorge with earthen flanks 26,800 feet long, (with 26,400 feet earthen bund to protect Gadhchiroli Town), 90 feet high	6,000 feet long, 44 feet high	6,000 feet long, 55 feet high	7,000 feet long, 30 feet high	masonry 3,900 feet long, 150 feet high
Spillway:	84 gates, 40 feet x 20 feet each, total capacity 933,500 cusecs	3,450 feet long, capacity 937,500 cusecs	3,510 feet long, capacity 955,200 cusecs	3,520 feet long, capacity 957,000 cusecs	55 gates, 50 feet x 30 feet each, total capacity 1,377,000 cusecs
Outlets:	penstocks in right flank, capacity 4,520 cusecs	penstocks in right flank, capacity 4,520 cusecs	penstocks in left flank, capacity 4,520 cusecs	penstocks in left flank, capacity 4,520 cusecs	penstocks in right flank, capacity 7,500 cusecs

6. Not available

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

9. to 18. Not applicable

POWER ASPECTS

19. **River supply proposed to be diverted and operation head**

Name of Power House	*Mean aperation head (feet)*	*Supply passing through turbines (cusecs)*	*(T.M.C.)*
Power House No. 1 at the foot of the dam near Gadhchiroli	50	3,620	114.2
Power House No. 2 at the foot of the weir near Samda	39	3,550	112.0
Power House No. 3 at the foot of the weir near Ghargaon	40	3,560	112.3
Power House No. 4 near village Kadholi	75	3,560	112.3
Power House No. 5 at the foot of the dam near village Watra Budruk	116.5	6,020	189.8

20. Proposed disposal of tail-race waters

Tail-race waters from power house No. 5 will be let into the river

21. Quantum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil.

23. Extent and type of area submerged by reservoir

The submergence above the Gadhchiroli dam and the three weirs will lie entirely in Maharashtra. The submergence above Pranhita dam near Watra budruk will lie partly in Maharashtra and partly in Andhra Pradesh. Total submergence will be above 277,000 acres in Maharashtra and about 55,000 acres in Andhra Pradesh, further particulars not available

24.-25. Not available

26. Not applicable

27. Not available

28. Main features and purpose of the scheme

Power generation

BAGH VALLEY PROJECT

105C.3-G.9-M.30

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; additional C.C.A. 25,500 acres

3. **Source of supply**

Kalisurar Nala near Murpor/Bagh/Wainganga/Pranhita/**Godavari**
Satbhaini Nala near Deori/Bagh/Wainganga/Pranhita/**Godavari**
Pick-up-weir on Bagh near Lohara/Wainganga/Pranhita/**Godavari**
Utilisation upstream:
existing : nil
proposed : nil

4. **Description of the dam and reservoir or tank**

		Kalisurar Nala	*Satbhaini Nala*
Live storage	(T.M.C.)	1.73	0.90
Dead storage	„	0.15	0.07
Carry-over	„	0.23	Nil
Annual reservoir losses	„	0.28	0.20
Filling period		....15th June to end of Oct.....	
Depletion period		....1st Aug. to 14th Feb......	
Catchment area (square miles)		53	24
Area submerged (acres)		2,690	1,810
Full reservoir level (R.L.)		1,102	1,126
Minimum pond level (R.L.)		1,074	1,106
Dam	:	earthen; 2,200 feet long, 80 feet high	earthen; 3,700 feet long, 46 feet high
Spillway	:	clear over-fall, 600 feet long; capacity 51,000 cusecs	800 feet long; capacity 34,000 cusecs
Outlets	:	river sluices capacity 1,000 cusecs	river sluices capacity 1,000 cusecs

5. **Description of the headworks**

Head works : pick-up-weir on Bagh river
Spillway : as under **10C.2-G.9-M.4**
Outlets : head regulator in left flank; 2 vents to be added each 5 feet x 6 feet

6. Description of the canal

Bagh Canal to be remodelled to the following data:

(contour); 60 miles long; two seasonal; unlined; **capacity 1,800 cusecs**

7. (a) Nature of investigations carried out up-to-date

Surveys completed, project report under preparation

(b) Actual or probable date of beginning of construction

IV Plan

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bhandara

G·C.A.	137,600 acres
C.C.A.	104,000 „
Deduct existing tank and well irrigation	17,000 „
Deduct C.C.A. under Bagh River Project.	61,500 „
Additional C.C.A.	**25,500** „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharfi	75,000 acres	86.2 percent
Rabi	50,000 „	57·5 „
Total	**125,000** „	**143.7** „
Deduct area irrigated under Bagh River Project	110,000 „	
Additional irrigation	15,000 „	

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
	............*inches*..........			......*T.M.C.*........	
June	7.6	19.1	1.7	1st Aug. to 14th Oct.	
July	19.8	35.1	8.5	4.55	0.39
August	23.7	37.5	4.0		
September	9.7	20.1	1.2		
October	2.6	12.1	1.2	15th Oct. to 14th Feb.	
November	0.5	6.0	Nil	5.35	0.28
December	0.1	1.4	,,		
January	0.5	2.0	,,		
Febuary	1.0	4.5	,,	15th Feb. to 31st July	
March	0.5	3.2	,,	Nil	—
April	0.7	5.8	,,		
May	0.4	1.7	,,		
Total	**67.1**			**9.90**	
Deduct diversion proposed under Bagh River Project				8.27	
Additional diversion				1.63	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 25 percent ; sandy loam to clayey loam 45 percent and clayey loam to clay 30 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Two seasonal*		*Kharif*			*Total area (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			
Sugarcane		*Others*		*Paddy*	*Pulses*	*Others*	
0.2	0.2	0.5	0.5	62.0	3.0	3.0	70.7

continued below

continued from above

Rabi					*Total cropped area (T. acres)*
Percentage of principal crops				*Total area (T. acres)*	
Gram	*Linseed*	*Wheat*	*Others*		
12.0	14.0	3.0	2.3	32.6	104.0

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy		*Wheat*	*Gram*		
60.0	75.0	24.0	16.0	50.0	125.0

(b) Are there any rules for regulating crop pattern ?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	200	400	1.2	0.6	1.8
Wheat	—	150	—	1.6	1.6
Gram	—	400	—	0.6	0.6

Overall delta at canal head 1.8 feet

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

100 small tanks, irrigating 15,000 acres ; area excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

1,000 wells irrigating 2 acres per well ; area excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

1,100 acres in Madhya Pradesh and 3,400 acres in Maharashtra as below:

	Maharashtra	*Madhya Pradesh*	*Maharashtra*
	Kaliswar	*Satbhaini*	*Pick-up-weir*
Culturable (acres)	636	440	780
Forest area ,,	795	550	900
Waste land ,,	159	110	130
Total ,,	**1,590**	**1,100**	**1,810**

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

EASTERN BAGH RIVER PROJECT

106C.3-G.9-M.31

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 22,800 acres

3. **Source of supply**

Eastern Bagh near Piparla/Wainganga/Pranhita/**Godavari**

Utilisation upstream : nil

4. **Description of the reservoir or tank**

Live storage	2.59 T.M.C.
Dead storage	0.20 ,,
Carry-over	Nil
Annual reservoir losses	0.12 T.M.C.
Filling period	15th June to end of Oct.
Depletion period	1st Aug. to 14th Feb.
Catchment area	85 square miles
Area submerged	1,200 acres
Full reservoir level	R.L. 1,194
Minimum pond level	R.L. 1,100

5. **Description of the headworks**

Dam : earthen, 2,300 feet long, 150 feet high

Spillway : masonry waste weir, 900 feet long, capacity 63,900 cusecs

Outlets : head regulator in left flank, capacity 400 cusecs

6. **Description of the canal**

Eastern Bagh Canal ; left bank; two seasonal; unlined; capacity **336 cusecs**; other particulars not available

7. **(a) Nature of investigations carried out up-to-date**

Present proposals based mainly on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District	Bhandara
G.C.A.	42,600 acres
C.C.A.	29,000 „
Deduct existing tanks and well irrigation	6,200 „
Net C.C.A.	22,800 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	16,000 acres	70.2 percent
Rabi	12,000 „	52.2 „
Total	**28,000 „**	**122.4 „**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
	...........*inches*..........			..........*T.M.C.*............	
June	7.6	19.1	0.8	1st Aug. to 14th Oct.	
July	19.8	34.1	8.5		
August	23.7	37.5	4.4	0.94	0.43
September	9.7	20.1	2.7		
October	2.6	12.2	Nil	15th Oct. to 14th Feb.	
November	0.5	6.4	„		
December	0.1	0.9	„	1.43	0.40
January	0.5	5.0	„		
February	1.0	4.5	„	15th Feb. to 31st July	
March	0.5	3.2	„	Nil	—
April	0.7	5.8	„		
May	0.4	2.1	„		
Total	**67.1**			**2.37**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 25 percent, sandy loam to clayey loam 45 percent, clayey loam to clay 30 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Two seasonal*		*Kharif*		
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*
Others		*Others*		*Paddy*	*Others*	
0.1	0.1	0.6	0.2	62.0	6.0	19.7

continued below

continued from above

Rabi					*Total cropped area (T. acres)*
Percentage of principal crops				*Total area (T. acres)*	
Wheat	*Gram*	*Linseed*	*Others*		
3.0	12.0	14.0	2.3	9.0	29.0

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total acres (T. acres)*	
Paddy		*Wheat*		
57.1	16.0	42.9	12.0	28.0

(b) Are there any rules for regulating crop pattern?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	200	400	1.2	0.6	1.8
Wheat	—	150	—	1.6	1.6
Overall delta at canal head			2.0 feet		

17. (a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

360 tanks, irrigating 5,656 acres, area excluded from the C.C.A.

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

272 wells, irrigating about 2 acres per well, area excluded from the C.C.A.

18. **Quantum of river supplies available in relation to withdrawals**

River supply data not available

19. to 21. Not applicable

GENERAL

22. **Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns**

Nil

23. **Extent and type of area submerged by reservoir**

The submergence consists of entirely forest area; 350 acres in Maharashtra and 850 acres in Madhya Pradesh

24. to 26. Not available

27. Not applicable

28. **Main features and purpose of the scheme**

Conversion of rain-fed cultivation to irrigated agriculture

KANHAN RIVER PROJECT 107C.3-G.9-M.32

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)
2. **Scope of the scheme or system**
   Multipurpose scheme; flow-cum-storage; irrigation C.C.A. 472,300 acres; power 36,000 kW. installed
3. **Source of supply**
   Kanhan at Bhuiwari and Llahidhana/Wainganga/Pranhita/**Godavari**
   24 T.M.C. of the tailrace waters of Pench River Project **108C.3-G.9-Ma.33**
   Utilisation upstream: existing nil
   considerable utilisation proposed upstream:
4. **Description of the reservoir or tank**

	Bhuiwari	*Llahidhana*
Live storage	16.50 (T.M.C.)	5.90
Dead storage	1.63 ,,	2.30
Carry-over	Nil	Nil
Annual reservoir losses (T.M.C.)	1.37	0.97
Filling period	....15th June to end of Oct.....	
Depletion period	....1st July to 30th June........	
Catchment area	648 (square miles)	808
Area submerged	6,500 acres	4,000 acres
Full reservoir level (R.L.)	2,010	1,600
Minimum pond level ,,	1,900	1,550

The sites of both dams lie in Madhya Pradesh

5. **Description of the headworks**

	Bhuiwari	*Llahidhana*
Dam :	masonry 2,200 feet long, 180 feet high with earthen flanks about 4,000 feet long	masonry 2,500 feet long, 125 feet high with earthen flanks, 3,500 feet long
pillway :	clear overfall, 2,000 feet long, capacity 178,500 cusecs	clear overfall, 2,100 fect long capacity 200,000 cusecs
Outlets :	head regulator in the right flank, capacity 1,400 cusecs	head regulator in the left flank, capacity 1,500 cusecs

(i) pick-up-weir near Chiulo; masonry, 2,000 feet long, 40 feet high (to divert water into a channel, about 5 miles long, for utilisation of a drop of about 150 feet)

(ii) pick-up-weir near Chincholi; masonry 2,000 feet long, 35 feet high, gated overfall type, 45 gates, each 40 feet x 15 feet, total capacity 309,000 cusecs; head regulators in right flank, capacity 4,500 cusecs, other particulars not available

6. **Description of the canal**

Kanhan (contour); right bank; 35 miles long; (branches 30 miles in Kanhan valley and 65 miles in Wardha valley); perennial; unlined; authorised capacity **3,500 cusecs**

7. **(a) Nature of investigations carried out up-to-date**

Preliminary investigations in progress

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

Item	*Names of districts*			*Total*
	Kanhan Canal and Kanhan branches in Kanhan valley	*Wardha Branches in Wardha valley*		
	Nagpur	*Nagpur*	*Wardha*	
	..........................*thousand acres*..............................			
G.C.A.	282.0	66.0	258.0	606.0
C.C.A.	230.0	45.0	200.0	475.0
Deduct exsiting irrigation under tanks and wells				2.7
Net C.C.A.				472.3

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated			*Intensity of irrigation*
	Kanhan valley	*Wardha valley*	*Total*	
	..........*thousand acres*...........			......*percentage*......
Perennial	7.5	6.3	13.8	2.9
Two seasonal	5.0	6.2	11.2	2.4
Long staple cotton	18.8	31.2	50.0	10.6
Kharif (Paddy)	62.5	25.0	87.5	18.5
Rabi	62.5	68.8	131.3	27.8
Hot weather	25.0	12.5	37.5	7.9
Total	**181.3**	**150.0**	**331.3**	**70.1**

11. **Normal rainfall and river supply proposed to be diverted**

Month	*Rainfall*						*continued below*
	Normal		*Maximum*		*Minimum*		
	Kanhan valley	*Wardha valley*	*Kanhan valley*	*Wardha valley*	*Kanhan valley*	*Wardha valley*	
	…………………	………… *inches*	…………	…………	…………	…………	
June	8.5	7.0	19.6	18.3	2.3	1.7	
July	14.0	13.0	22.2	26.2	6.4	5.2	
August	10.0	12.0	17.7	23.5	6.2	2.3	
September	8.4	8.0	14.8	18.8	1.3	1.3	
October	2.2	2.2	8.2	9.4	Nil	Nil	
November	0.6	0.5	3.8	7.4	,,	,,	
December	0.5	0.4	1.0	1.0	,,	,,	
January	0.4	0.3	3.7	4.7	,,	,,	
February	0.5	0.4	6.2	3.4	,,	,,	
March	0.5	0.4	4.1	2.8	,,	,,	
April	0.5	0.4	3.7	4.6	,,	,,	
May	0.7	0.7	4.0	3.4	,,	,,	
Total	**46.8**	**45.3**					

continued from above	*River supply proposed to be diverted*		*Capacity factor*
	Kanhan valley	*Wardha valley*	
	………… *T.M.C.*	………………	
	15th June to 14th Oct.		
	5.06	4.64	0.26
	15th Oct. to 14th Feb.		
	7.04	7.00	0.38
	15th Feb. to 14th June		
	7.31	7.03	0.40
	19.41	**18.67**	

******This does not include* 6.2 *T.M.C. to be delivered to Lower Wunna Project* (94*C.3-G.8-M.*19)

12. Not available

13. (a) Characteristics of soils in the commanded area

	Kanhan valley	*Wardha valley*
Sandy to sandy loam	18 percent	15 percent
sandy loam to clayey loam	55 ,,	35 ,,
clayey loam to clay	27 ,,	50 ,,

(b) Has any study been made of the likely effect of the introduction of irrigation on soil charactetistics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

	Perennial		*Two seasonal*		*Kharif*							*Rabi*				*Total cropped area (T. acres)*
	Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*					*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*	
	Others		*Others*		*Jowar*	*Cotton*	*Pulses*	*Paddy*	*Others*		*Wheat*	*Jowar*	*Linseed*	*Others*		
Kanhan Valley	0.7	1.7	6.0	13.8	27.0	11.0	8.0	4.0	2.0	119.6	18.0	10.0	9.0	4.3	94.9	230.0
Wardha Valley	0.5	1.2	1.0	2.5	38.0	22.0	10.0	—	5.0	183.7	14.0	—	6.0	3.5	57.6	245.0

15. (a) Proposed pattern of irrigated cultivation

	Perennial			*Two seasonal*			*Kharif*	
	Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*
	Sugarcane plantain	*Others*		*Others*	*Cotton long staple*		*Paddy*	
Kanhan valley	4.1	—	7.5	2.8	10.3	23.8	34.5	62.5
Wardha valley	—	4.2	6.3	4.2	20.8	37.5	16.7	25.0

continued below

continued from above

	Rabi				*Hot weather*		*Grand Total (T. acres)*
	Percentag of principal crops			*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
	Wheat	*Gram*	*Jowar*		*Groundnut*		
Kanhan Valley	10.3	20.7	3.5	62.5	13.8	25.0	181.3
Wardha Valley	8.3	8.3	29.2	68.7	8.3	12.5	150.0

(b) Are there any rules for regulating crop pattern ?

No, but sanctions will be regulated to conform to the proposed crop pattern

16. Seasonal Duty and Delta at distributory head (as anticipated)

	Kanhan Valley						
	Duty (acres per mean cusec)			*Delta (feet)*			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Sugarcane	120	70	50	2.0	3.5	4.7	10.2
Plantain							
Two seasonal	200	130	—	1.2	1.9	—	3.1
Long staple cotton	—	—	100	—	—	2.4	2.4
Paddy	200	400	—	1.2	0.6	—	1.8
Wheat	—	150	—	—	1.6	—	1.6
Gram	—	400	—	—	0.6	—	0.6
Jowar	—	200	—	—	1.2	—	1.2
Groundnut	—	—	100	—	—	2.4	2.4

continued below

Overall delta at canal head 2.4 feet

continued from above

	Wardha Valley						
	Duty (acres per mean cusec)			*Delta (feet)*			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Sugarcane	120	100	75	2.0	2.4	3.2	7.6
Plantain	150	130	—	1.6	1.9	—	3.5
Two seasonal	400	—	100	0.6	—	2.4	3.0
Long staple cotton	150	400	—	1.6	0.6	—	2.2
Paddy	—	150	—	—	1.6	—	1.6
Wheat	—	400	—	—	0.6	—	0.6
Gram	—	200	—	—	1.2	—	1.2
Jowar	—	—	100	—	—	2.4	2.4

Overall delta at canal head 2.9 feet

17. (a) Number of tanks in operatian in the area proposed to be irrigated and the area irrigated therefrom

5 small tanks; irrigating about 75 acres, excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

1,300 wells; each capable of irrigating about 2 acres of seasonal crops, excluded from the C.C.A.

18. Quantum of river supplies available in reletion to withdrawals

River supply data not available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Range of operation head (feet)	*Supply passing through turbines (cusecs)*	
150	15th June to 14th Oct.	6.7. T.M.C.
	15th Oct. to 14th Feb.	6.32 „
	15th Feb. to 14th June	6.70 „
		19.72 „

20. Proposed disposal of tail-race waters.

The tail-race waters will be picked up at Chincholi weir and used by the Kanhan Canal

21. Quantum of river supplies available in relation to withdrawals

See item 18 above

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Submergence entirely in Madhya Pradesh, other particulars not available

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture and generation of power

PENCH RIVER PROJECT 108C.3-G.9-M.33

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

Multi-purpose scheme ; flow-cum-storage ; irrigation C.C.A. 229,110 acres, power 66,700 kW installed

3. **Source of supply**

Pench at Totaladoh and Kalapatha/Kanhan/Wainganga/Pranhita/**Godavari**

Utilisation upstream :
existing : nil
proposed : considerable

4. **Description of the reservoir or tank**

	Totaladoh	*Kalapatha* *Pick up weir at*
Live storage (T.M.C.)	36.80	1.6
Dead storage ,,	18.80	1.00
Carry-over	Nil	Nil
Annual reservoir losses (T.M.C.)	4.32	1.30
Filling period	......15th June to end of Oct......	
Depletion period	......1st July to 30th June........	
Catchment area (square miles)	1,660	1,820
Area submerged (acres)	20,670	4,000
Full reservoir level (R.L.)	1,615	1,015
Minimum pond level ,,	1,530	1,000

5. **Description of the headworks**

Dam :	masonry, 3,000 feet long, 225 feet high	masonry, 2,500 feet long, 50 feet high with earthen flanks 31,000 feet long, 25 feet high
Spillway :	waste weir with crest gates; capacity 286,000 cusecs	clear-overall 1,800 feet long, capacity 298,000 cusecs
Outlets :	power tunnel on left flank, 20,400 feet long, capacity 3,000 cusecs	head regulator in right and left flank, capacity 2,500 cusecs each

6. **Description of the canals**

Pench Right Bank Canal (contour); 10 miles long; perennial ; unlined; authorised capacity **2,500 cusecs.** This will tail at the pick up weir on Kanhan at Chincholi **107C.3-G.9-M.32**

Pench Left Bank Canal; (contour); 30 miles long ; perennial; unlined; authorised capacity **2,500 cusecs**

7. **(a) Nature of investigations carried out up-to-date**

Surveys completed, project report under prepration

(b) Actual or probable date of beginning of construction IV Plan

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

	Names of districts			
	Pench Right Bank Canal	*Pench*	*Pench LeftBank Canal*	*Total*
	Nagpur	*Nagapur*	*Bhandara*	
	............*thousand acres*..............			
G.C.A.	21.0	200.0	84.0	305.0
C.C.A.	16.0	162.0	62.0	240.0
Deduct existing irrigation under well and tanks				10.9
Net C.C.A.				229.1

10. **Area proposed to be irrigated annually and intensity of irrigation (both canals)**

	Area proposed to be irrigated	*Intensity of irrigation*
	......*thousand acres*......	......*percentage*......
Perennial	9.0 acres	3.9 percent
Two seasonal	6.0 ,,	2.6 ,,
Kharif	105.0 ,,	45.8 ,,
Rabi	82.5 ,,	36.0
Gram		
Hot weather	30.0 ,,	13.1 ,,
Total	**232.5** ,,	**101.5** ,,

11. **Normal rainfall and river supply proposed to be diverted**

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*...............			......*T.M.C.*......	
June	8.6	16.6	2.9	15th June to 14th Oct.	
July	14.0	28.9	7.8	7.25	0.14
August	12.0	24.8	3.7		
September	8.5	14.8	2.2		
October	1.9	9.0	Nil		
November	0.5	4.8	,,	15th Oct. to 14th Feb.	
December	0.4	0.7	,,	8.55	0.16
January	0.5	6.4	,,		
February	0.6	5.6	,,		
March	0.6	4.1	,,	15th Feb. to 14th June	
April	0.6	6.1	,,	5.43	0.10
May	0.7	2.6	,,		
Total	**48.9**			**21.23***	

*excludes 24.0 T.M.C. to be delivered by the Pench Right Bank Canal upstream of Chirncholi weir (117C.3—G.9-M-32)

12. Not available

13. (a) **Characteristics of soils in the commanded area**

Sandy to sandy loam 18 percent; sandy loam to clayey loam 55 percent and clayey loam to clay 27 percent

(b) **Has any study been made of the likely effect of the introduction of irrigation on soils characteristics ?**

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*		*Kharif*						*Rabi*						*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*					*Total area (T. acres)*	*Percentage of principal crops*					*Total area (T. acres)*	
Sugarcane	*Others*		*Seasonal*		*Paddy*	*Pulses*	*Jowar*	*Cotton*	*Others*		*Wheat*	*Jowar*	*Linseed*	*Gram*	*Others*		
0.1	0.8	2.0	2.0	4.8	17.0	9.0	17.0	2.0	5.0	120.0	18.0	14.0	6.0	7.0	2.1	113.0	240.0

15· (a) Proposed pattern of irrigated cultivation

Perennial		*Two seasonal*		*Kharif*		*Rabi*			*Hot weather*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane Plantain		*Chillies Pulses etc.*		*Paddy*		*Wheat*	*Gram*		*Groundnut*		
3.9	9.0	2.6	6.0	45.2	105.0	9.6	25.8	82.5	12.9	30.0	232.5

(b) Are there any rules for regulating crop pattern ?

No

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)			*Delta (feet)*			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Sugarcane	120	70	50	2.0	3.5	4.8	10.3
Two seasonal	200	130	—	1.2	1.9	—	3.1
Paddy	200	400	—	1.2	0.6	—	1.8
Wheat	—	150	—	—	1.6	—	1.6
Gram	—	400	—	—	0.6	—	0.6
Hot weather	—	—	100	—	—	2.4	2.4

Overall delta at canal head 2.1 feet

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

1,200 tanks; irrigating about 10,000 acres; excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated with area irrigated therefrom

450 wells; each capable of irrigating 2 acres of seasonal crops, excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available for only one year

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Month	*Rang of operation head (feet)*	*Supply passing through turbines (cusecs)*
June	405 to 408	1,485
July	408 to 425	1,472
August	425 to 435	1,415
September	435 to 440	1,382
October	440 to 440	1,365
November	440 to 436	1,365
December	436 to 432	1,377
January	432 to 428	1,390
February	428 to 423	1,405
March	423 to 418	1,420
April	418 to 412	1,438
May	412 to 405	1,458
Total		**44.6 T.M.C.**

20. Proposed disposal of tail-race waters

The tail-race waters will be let into the river about two miles below the dam and picked up at Kalapantha weir situated about 16 miles down stream

21. Quantum of river supplies available in relation to withdrawals

See item 18 above

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Details of submergence

	Storage at Totaldah		Pick-up-weir site
	District Chindwada in Madhya Pradesh	District Nagpur in Maharashtra	District Nagpur in Maharashtra
Culturable	—	—	3,500 acres
Forest area	14,990 acres	5,680 acres	—
Waste lands	—	—	500 „
Total	**14,990 „**	**5,680 „**	**4,000 „**

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture; generation of power

KOLAR PROJECT

109C.3-G.9-M.35

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A 11,400 acres

3. **Source of supply**

Kolar near Pipla/Kanhan/Wainganga/Pranhita/**Godavari**

Utilisation upstream :

existing : nil

proposed : nil

4. **Description of the reservoir or tank**

Live storage	1.10 T.M.C.
Dead storage	0.20 ,,
Carry-over	0.20 ,,
Annual reservoir losses	0.36 ,,
Filling period	15th June to end of Oct.
Depletion period	1st Aug. to 14th June
Catchment area	88 square miles
Area submerged	1,600 acres
Full reservoir level	R.L. 1,162
Minimum pond level	R.L. 1,138

5. **Description of the headworks**

Dam : earthen, 5,000 feet long, 66 feet high

Spillway: waste weir; 900 feet long, capacity 6,400 cusecs

Outlets : head regulator in right flank; capacity 100 cusecs

6. **Description of the canal**

Kolar Canal (contour); right bank, 10 miles long; perennial; unlined; capacity **100 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Present proposals based mainly on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Nagpur

G.C.A.	17,000 acres
C.C.A.	12,000 ,,
Deduct area irrigated under wells	600 ,,
Net C.C.A.	11,400 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	700 acres	6.1 percent
Two seasonal	400 ,,	3.5 ,,
Kharif	2,100 ,,	18.4 ,,
Rabi	2,400 ,,	21.1 ,,
Long staple cotton	2,800 ,,	24.6 ,,
Total	**8,400** ,,	**73.7** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*	....		.....*T.M.C.*......	
June	8.0	19.4	2.5	1st Aug. to 14th Oct.	
July	10.0	22.0	6.4	0.26	0.40
August	8.6	16.6	3.1		
September	7.0	18.2	1.4		
October	1.8	11.0	Nil	15th Oct. to 14th Feb.	
November	0.8	6.0	,,	0.30	0.28
December	0.7	1.8	,,		
January	0.6	5.4	,,		
February	0.5	4.5	,,	15th Feb. to 14th June	
March	0.5	3.5	,,	0.44	0.42
April	0.4	3.3	,,		
May	1.1	4.5	,,		
Total	**40.0**			**1.00**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 18 percent; sandy loam to clayey loam 55 percent and clayey loam to clay 27 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*		*Kharif*				
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*
Sugarcane	*Others*		*Two seasonal*		*Jowar*	*Pulses*	*Cotton*	*Others*	
—	2.5	0.3	1.7	0.2	53.0	15.0	20.0	2.8	10.9

continued below

continued from above

Rabi			*Total cropped area (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	
Wheat	*Gram*		
4.0	1.0	0.6	12.0

15. (a) Proposed pattern of irrigated cultivation

Perennial			*Two seasonal*		*Kharif*	
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*
Plantains	*Others*		*Chillies*		*Paddy*	
4.2	4.1	0.7	4.8	0.4	25.0	2.1

continued below

continued from above

Rabi			*Cotton*		*Grand Total (T. acres)*
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres*	
Wheat	*Gram*		*Long staple cotton*		
12.0	16.7	2.4	33.3	2.8	8.4

(b) Are there any rules for regulating crop pattern ?

No; but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)			*Delta (feet)*			
	Kharif	*Rabi*	*Hot weather*	*Kharif*	*Rabi*	*Hot weather*	*Total*
Plantains	80	70	50	3.0	3.5	4.8	11.3
Other perennial	120	100	75	2.0	2.4	3.2	7.6
Two seasonal	150	130	—	1.6	1.9	—	3.5
Cotton (Linseed)	—	—	100	—	—	2.4	2.4
Paddy	150	400	—	1.6	0.6	—	2.2
Wheat	—	150	—	—	1.6	—	1.6
Gram	—	400	—	—	0.6	—	0.6

Overall delta at canal head 2.7 feet

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

300 wells; irrigating 2 acres per well (600 acres); area excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

1,600 acres (culturable area 1,400 acres, waste 200 acres) in Maharashtra

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

CHULBUND PROJECT 110C.3-G.9-M.36

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 5,500 acres

3. **Source of supply**

Chulbund near Jhirkutola/Wainganga/Pranhita/**Godavari**

4. **Description of the reservoir or tank**

Live storage	0.72 T.M.C.
Dead storage	0.09 ,,
Carry-over	Nil
Annual reservoir losses	0.10 T.M.C.
Filling period	15th June to end of Oct.
Depletion period	1st Aug. to 14th Feb.
Catchment area	23 square miles
Area submerged	870 acres
Full reservoir level	R.L. 985
Minimum pond level	R.L. 955

5. **Description of the headworks**

Dam : earthen, 1,500 feet long, 67 feet high

Spillway: masonry waste weir, 550 feet long, capacity 33,570 cusecs

Outlets : head regulators in left and right flanks, capacity 40 and 80 cusecs respectively

6. **Description of the canals**

Chulbund Left Bank Canal (contour 5 miles, ridge 9 miles); two seasonal; unlined; capacity **40 cusecs**

Chulbund Right Bank Canal (contour 7 miles, ridge 12 miles); two seasonal; unlined; capacity **80 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Present proposals based mainly on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Bhandara

	Left Bank Canal	*Right Bank Canal*	*Total*
	....................*thousand acres*..................		
G.C.A.	5.0	9.2	14.2
C.C.A.	2.7	5.4	8.1
Deduct area under tank and wells			2.6
Net C.C.A.			5.5

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	5,000 acres	90.9 percent
Rabi	5,500 „	100.0 „
Total	**10,500** „	**190.9** „

11. Normal rainfall and river supply proposed to be diverted (both canals)

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	................*inches*.............			....*T.M.C.*.....	
June	9.2	15.7	1.5	1st Aug. to 14th Oct.	
July	16.0	40.3	8.9	0.28	0.36
August	17.0	28.5	7.8		
September	6.0	19.5	2.2		
October	1.7	12.0	Nil	15th Oct. to 14th Feb.	
November	0.2	2.2	„	0.51	0.40
December	0.3	1.0	„		
January	0.6	3.9	„		
February	1.0	5.6	„	15th Feb. to 31st July	
March	0.6	5.2	„	Nil	—
April	0.5	5.9	„		
May	0.9				
Total	**54.0**			**0.79**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 25 percent, sandy loam to clayey loam 45 percent and clayey loam to clay 30 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*		*Kharif*			
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*
Sugarcane	*Others*		*Others*		*Paddy*	*Pulses*	*Others*	
0.5	0.7	0.1	1.2	0.1	57.0	8.0	1.7	5.4

continued below

continued from above

Rabi						*Total cropped area (T. acres)*
Percentage of principal crops					*Total area (T. acres)*	
Wheat	*Jowar*	*Linseeds*	*Gram*	*Others*		
6.0	3.0	5.0	14.0	2.9	2.5	8.1

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*			*Grand Total (T.acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy		*Wheat*	*Gram*		
47.6	5.0	42.9	9.5	5.5	10.5

(b) Are there any rules for regulating crop pattern ?

No; but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	200	400	1.2	0.6	1.8
Wheat	—	150	—	1.6	1.6
Gram	—	400	—	0.6	0.6

Overall delta at canal head 1.7 feet

17. **(a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

80 tanks, irrigating 2,540 acres; area excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

40 wells, irrigating about 2 acres per well, area excluded from the C.C.A.

18. **Quantum of river supplies available in relation to withdrawals**

River supply data not available

19. to 21. Not applicable

GENERAL

22. **Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns**

Nil

23. **Extent and type of area submerged by reservoir**

973 acres (culturable 146 acres; forests 681 acres, waste land 146 acres) in Maharashtra

24. to 26. Not available

27. Not applicable

28. **Main features and purpose of the scheme**

Conversion of rain-fed cultivation to irrigated agriculture

SASAKURAN NALLA PROJECT 111C.3-G.9-M.37

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**
Irrigation scheme; flow-cum-storage; C.C.A. 17,100 acres

3. **Source of supply**
Sasakuran nalla near Mogra/Chulbund/Wainganga/Pranhita/**Godavari**
Kusumghat/Sasakuran/Chulband/Wainganga/Pranhita/**Godavari**
Utilisation upstream : nil

4. **Description of the reservoir or tank**

	Sasakuran	*Kusumghat*
Live storage (T.M.C.)	1.69	0.74
Dead storage ,,	0.18	0.04
Carry-over	Nil	Nil
Annual reservoir losses (T.M.C.)	0.31	0.13
Filling period	....15th June to end of Oct.....	
Depletion period	....1st. Aug. to 14th Feb......	
Catchment area (square miles)	57	16
Area submerged (acres)	2,930	1,310
Full reservoir level (R. L.)	894	875
Minimum pond level ,,	870	850

5. **Description of the headworks**

	Sasakuran	*Kusumghat*
Dam :	masonry, 250 feet long, 44 feet high	masonry, 800 feet long, 40 feet high
Spillway :	waste weir, 250 feet long, capacity 53,000 cusecs	weir, clear overfall, 800 feet long, capacity 28,150 cusecs
Outlets :	head regulators in left and right flanks of the dam with capacity 255 cusecs and 85 cusecs respectively.	head regulators on left flank, capacity 200 cusecs

6. **Description of the canal**

Sasakuran Left Bank Canal (contour 25 miles and ridge 7 miles); two seasonal; unlined; capacity **255 cusecs**

Sasakuran Right Bank Canal (contour); 8 miles long; two seasonal; unlined; capacity **85 cusecs**

Kusumghat Feeder Canal; 0.1 mile long outfalling into Sasakuran Left Bank Canal, capacity **200 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Present proposals based mainly on topo-sheet studies

(b) Not available

8. Not available.

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

District Bhandara

	Left Bank Canal	*Right Bank Canal*	*Total*
	............*thousand acres*............		
G.C.A.	41.4	7.6	49.0
C.C.A.	17.0	4.8	21.8
Deduct existing tank & well irrigation			4.7
Net C.C.A.			17.1

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	16,000 acres	93.6 percent
Rabi	16,000 „	93.6 „
Total	**32,000 „**	**187.2 „**

11. Normal rainfall and river supply proposed to be diverted

Month	Rainfall			River supply proposed to be diverted	Capacity factor
	Normal	Maximum	Minimum		
1	2	3	4	5	6
	..........*inches*	....	....	....*T.M.C.*....	
June	9.2	15.7	1.5	1st Aug. to 14th Oct.	
July	16.0	40.3	8.9	0.93	0.27
August	17.0	28.6	7.8		
September	6.0	19.5	2.2		
October	1.7	12.0	Nil		
November	0.2	2.2	,,		
December	0.3	1.0	,,	15th Oct. to 14th Feb.	
January	0.6	3.9	,,	1.66	0.29
February	1.0	5.6	,,		
March	0.6	6.2	,,	15th Feb. to 31st July	
April	0.4	5.9	,,	Nil	—
May	0.9	9.4	,,		
Total	**53.9**			**2.59**	

12. Not available

13. (a) **Characteristics of soils in the commanded area**

Sandy to sandy loam 25 percent, sandy loam to clayey loam 45 percent, clayey loam to clay 30 percent.

(b) **Has any study been made of the likely effect of introduction of irrigation on soil characteristics ?**

No

14 Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Two seasonal*	
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*
Others		*Others*	
0.9	0.2	0.9	0.2

continued below

continued from above

Kharif				*Rabi*						*Total cropped area (T. acres)*
Percentage of principal crops			*Total area (T. acres)*	*Percentage of principal crops*					*Total area (T. acres)*	
Paddy	*Pulses*	*Others*		*Wheat*	*Jowar*	*Gram*	*Linseed*	*Others*		
57.0	8.0	2.5	14.7	6.0	3.0	14.0	5.0	2.7	6.7	21.8

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy		*Wheat*	*Gram*		
50.0	16.0	46.9	3.1	16.0	32.0

(b) Are there any rules for regulating crop pattern ?

No; but scantions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	200	400	1.2	0.6	1.8
Wheat	—	150	—	1.6	1.6
Gram	—	400	—	0.6	0.6

Overall delta at canal head 1.9 feet

17. (a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

225 tanks, irrigating 4,500 acres, area excluded from the C.C.A.

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

100 wells, irrigating 2 acres per well, area excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

	Sasakuran	*Kusumghat*	*Total*
		acres	
Culturable area	1,180	130	1,310
Forest area	1,460	1,050	2,510
Waste land	290	130	420
Total	**2,930**	**1,310**	**4,240**

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

SATTI RIVER PROJECT

112C.3-G.9-M.38

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**
   Irrigation scheme; flow-cum-storage; C.C.A. 25,900 acres

3. **Source of supply**
   Tirkhudi near Bamani/Satti/Wainganga/Pranhita/**Godavari**
   Satti nala near Damanghat and Palasgad/Wainganga/Pranhita/**Godavari**
   Utilisation upstream:
   existing : nil
   proposed : nil

4. **Description of the reservoir or tank**

	Tirkhudi	*Damanghat*	*Palasgad*
Live storage (T.M.C.)	0.57	0.98	1.25
Dead storage ,,	0.05	0.07	0.30
Carry-over ,,	Nil	Nil	Nil
Annual reservoir losses (T.M.C.)	0.04	0.08	0.30
Filling period	....15th June to end of Oct.. ..		
Depletion period	....1st Aug. to 14th Feb......		
Catchment area (square miles)	15	25	139
Area submerged (acres)	360	790	4,400
Full reservoir level (R.L.)	945	930	808
Minimum pond level ,,	893	885	798

5. **Description of the headworks**

Dam :	earthen, 2,800 feet long, 95 feet high	earthen 2,650 feet long, 90 feet high
Spillway :	masonry waste weir, 450 feet long, capacity 27,000 cusecs	clear over-all type, 750 feet long, capacity 35,000 cusecs
Outlets :	river sluices, capacity 525 cusecs	river sluices, capacity 525 cusecs

   Pick-up-weir-cum-storage at Palasgad, masonry, 2,000 feet long, 30 feet high, capacity 83,000 cusecs, with flank dykes 2,400 feet long, 11 feet high

   Head regulator in right flank, capacity 525 cusecs

6. **Description of the canal**
   Satti Canal (contour 20 miles & ridge 20 miles); right bank; two seasonal; unlined; capacity **525 cusecs**

7. (a) Nature of investigations carried out up-to-date

Present proposals based mainly on topo-sheet studies

(b) Not available

8. - Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District	Chanda
G.C.A.	110,800 acres
C.C.A.	32,500 ,,
Existing tank & well irrigation	6,600 ,,
Total	**25,900 ,,**

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	25,000 acres	96.5 percent
Rabi	20,000 ,,	77.2 ,,
Total	**45,000 ,,**	**173.7 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	....	*inches*	....	..*T.M.C.*..	
June	9.8	17.2	2.2		
July	17.0	35.0	8.9		
August	16.0	30.6	5.3	1st Aug. to 14lh Oct.	
September	7.1	17.9	1.7		
October	1.5	9.6	Nil	1.48	0.44
November	0.3	2.7	,,	15th Oct. to 14th Feb.	
December	0.4	0.5	,,		
January	0.6	1.7	,,	2.33	0.42
February	1.0	3.3	,,	15th Feb. to 31st July	
March	0.5	3.4	,,		
April	0.7	2.4	,,	Nil	—
May	0.8	2.0	,,		
Total	**55.7**			**3.81**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 20 percent, sandy loam to clayey loam 55 percent and clayey loam to clay 25 percent.

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Two seasonal*		*Kharif*			
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*
Others		*Chillies*		*Paddy*	*Pulses*	*Others*	
0.3	0.1	1.0	0.3	62.0	6.0	2.2	22.8

continued below

continued from above

Rabi				*Total cropped area (T. acres)*
Percentage of principal crops			*Total area (T. acres)*	
Jowar	*Ground nut*	*Others*		
14.0	9.0	5.5	9.3	32.5

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Wheat*		
55.5	25.0	44.5	20.0	45.0

(b) Are there any rules for regulating crop pattern ?

No; but sanctions will be regulated to conform to the proposed crop pattern.

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	200	400	1.21	0.61	1.82
Wheat	—	150	—	1.62	1.62

Overall delta at canal head 1.9 feet

17. (a) **Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

400 tanks, irrigating about 6,000 acres, area excluded from Ayacut.

(b) **Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom**

300 wells, irrigating 2 to 3 acres per well, area excluded from Ayacut.

18. **Quantum of river supplies available in relation to withdrawals**

River supply data not available

19. to 21. Not applicable

GENERAL

22. **Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns**

Nil

23. **Extent and type of area submerged by reservoir**

	Tirkhudi nalla storage	*Satti nalla storage*	*Pick-up-weir*
		acres	
Culturable area	—	—	2,200
Forest area	360	790	1,760
Waste lands	—	—	440
Total	**360**	**790**	**4,400**

Entire submergence, 5,500 acres in Maharashtra

24. to. 26. Not available

27. Not applicable

28. **Main features and purpose of the scheme**

Conversion of rain-fed cultivation to irrigated agriculture

TULTULI PROJECT 113C.3-G.9-M.39

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**
Irrigation scheme; flow-cum-storage ; C.C.A. 38,000 acres

3. **Source of supply**
Tipagadi Nalla near Kumalpur/Khobragadi/Wainganga/Pranhita/**Godavari**
Bhedri Nalla near Phulkoda/Khobragadi/Wainganga/Pranhita/**Godavari**
Khobragadi near Tultuli/Wainganga/Pranhita/**Godavari**
Utilisation upstream :
Existing : nil
Khobragadi Project

4. **Description of the reservoir or tank**

	Tipagedi Nalla	*Bhedri Nalla*	*Khobragadi*
Live storage (T.M.C.)	3.23	1.35	1.08
Dead storage „	0.38	0.08	0.48
Carry-over „	Nil	Nil	Nil
Annual reservoir losses (T.M.C.)	0.25	0.13	0.42
Filling period	......15th June to end of Oct.......		
Depletion period	......1st Aug. to 14th Feb.....		
Catchment area (square miles)	60	31	288
Area submerged (acres)	2,270	1,350	3,265
Full reservoir level (R.L.)	975	958	770
Minimum pond level „	920	910	155
Dam :	earthen; 1,300 feet long; 115 feet high	earthen; 6,200 feet long, 49 feet high	
Spillway :	masonry waste weir; 500 feet long, capacity 54,250 cusecs	masonry waste weir; 1,200 feet long; capacity 39,250 cusecs	
Outlets :	river sluice; capacity 800 cusecs	river sluice; capacity 800 cusecs	

5. **Description of the headworks**
Headworks : Pick-up-weir-cum-storage on Khobragadi near Tultuli 2,800 feet long; 45 feet high; flood discharge capacity 110,000 cusecs; earthen flanks 12,100 feet long, and 15 to 50 feet high respectively.
Head regulator, left flank; capacity 800 cusecs

6. Description of the canal

Tultuli Canal (contour 20 miles and ridge 20 miles); left bank; two seasonal; unlined; capacity 800 cusecs

7. (a) Nature of investigations carried out up-to-date

Present proposals based mainly on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Chanda

G.C.A.	136,300 acres
C.C.A.	45,200 „
Deduct area under existing tanks and wells	7,200 „
Net C.C.A.	38,000 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	38,000 acres	100.0 percent
Rabi	38,000 „	100.0 „
Total	**76,000 „**	**200.0 „**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*	....		........*T.M.C*........	
June	9.8	17.2	2.2		
July	16.8	35.0	8.9		
August	14.8	30.6	5.3	1st Aug. to 14th Oct.	
September	7.1	17.9	1.7	2.24	0.43
October	1.5	9.6	Nil		
November	0.3	2.7	„	15th Oct. to 14th Feb.	
December	0.4	0.5	„	4.05	0.48
January	0.6	1.7	„		
February	1.0	2.3	„		
March	0.6	3.4	„	15th Feb. to 31st July	
April	0.8	2.3	„	Nil	—
May	0.8	2.0	„		
Total	**54.5**			**6.29**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 20 percent, sandy loam to clayey loam 55 percent and clayey loam to clay 25 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Two seasonal*		*Kharif*			
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*
Others		*Chillies*		*Paddy*	*Pulses*	*Others*	
0.2	0.1	1.1	0.5	62.0	6.0	1.9	31.6

continued below

continued from above

Rabi				*Total cropped area (T. acres)*
Percentage of principal crops			*Total area (T. acres)*	
Jowar	*Gram*	*Others*		
14.0	9.0	5.8	13.0	45.2

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy		*Wheat*	*Gram*		
50.0	38.0	47.4	2.6	38.0	76.0

(b) Are there any rules for regulating crop pattern ?

No; but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	200	400	1.2	0.6	1.8
Wheat	—	150	—	1.6	1.6
Gram	—	400	—	0.6	0.6

Overall delta at canal head 1.9 feet

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

500 tanks irrigating 6,500 acres, excluded from C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

350 wells, irrigating 2 acres per well, area excluded from C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence in Maharashtra; culturable area 2,850 acres; forest area 3,695 acres; waste land 340 acres;

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

KHOBRAGADI PROJECT

114C.3-G.9-M.40

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**
Irrigation scheme; flow-cum-storage; C.C.A. 18,600 acres

3. **Source of supply**
Khobragadi at Khobramendha/Wainganga/Pranhita/**Godavari**
Utilisation upstream : nil

4. **Description of the reservoir or tank**

Live storage	1.94 T.M.C.
Dead storage	0.22 „
Carry-over	Nil
Annual reservoir losses	0.28 T.M.C.
Filling period	15th June to Oct.
Depletion period	1st Aug. to 14th Feb.
Catchment area	58 square miles
Area submerged	2,650 acres
Full reservoir level	R.L. 950
Minimum pond level	R.L. 920

5. **Description of the headworks**
Dam : masonry; 600 feet long; 60 feet high with dykes; 5,800 feet long; 60 feet high
Spillway : masonry; 600 feet long; capacity 53,200 cusecs
Outlets : head regulator in right flank; capacity 320 cusecs

6. **Description of the canal**
Khobragadi Canal (contour 9 miles and ridge 31 miles); right bank; unlined; two seasonal; authorised capacity **320 cusecs**

7. (a) **Nature of investigations carried out up-to-date**
Present proposal mainly based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Chanda

G.C.A.	96,400	acres
C.C.A.	23,000	„
Deduct area under existing tank and wells	4,400	„
Net C.C.A.	18,600	„

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	15,000 acres	80.6 percent
Rabi	10,500 „	56.5 „
Total	**25,500 „**	**137.1 „**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*..........			.......*T.M.C.*......	
June	9.8	17.2	2.2		
July	16.8	35.0	8.9	1st Aug. to 14th Oct.	
August	14.8	30.6	5.3	0.89	0.43
September	7.1	17.9	1.7		
October	1.5	9.6	Nil	15th Oct. to 14th Feb.	
November	0.3	2.7	„	1.28	0.38
December	0.4	0.5	„		
January	0.6	1.7	„		
February	1.0	3.3	„	15th Feb. to 31st July	
March	0.6	3.4	„	Nil	—
April	0.8	2.4	„		
May	0.8	2.0	„		
Total	**54.5**			**2.17**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 20 percent, sandy loam to clayey loam 55 percent and clayey loam to clay 25 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial			*Two seasonal*		*Kharif*			
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*
Sugarcane	*Others*		*Chillies*		*Paddy*	*Pulses*	*Others*	
0.2	0.2	0.1	0.9	0.2	62.0	6.0	2.0	16.1

continued below

continued from above

Rabi				*Total cropped area (T. acres)*
Percentage of principal crops			*Total area (T. acres)*	
Jowar	*Gram*	*Others*		
14.0	9.0	5.7	6.6	23.0

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Paddy		*Wheat*		
58.8	15.0	41.2	10.5	25.5

(b) Are there any rules for regulating crop pattern ?

No; but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	200	400	1.2	0.6	1.8
Wheat	—	150	—	1.6	1.6

Overall delta at canal head 2.0 feet

17. **(a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom**

500 tanks, irrigating about 4,000 acres, excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

200 wells, each irrigating about 2 acres, area excluded from the C.C.A.

18. **Quantum of river supplies available in relation to withdrawals**

River supply data not available

19. to 21. Not available

GENERAL

22. **Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns**

Nil

23. **Extent and type of area submerged by reservoir**

Entire submergence would lie in Maharashtra (culturable 680 acres; forests 1,700 acres and waste lands 270 acres)

24. to 26. Not available

27. Not applicable

28. **Main features and purpose of the scheme**

Conversion of rain-fed cultivation to irrigated agriculture

KATHANI PROJECT

115C.3-G.9-M.41

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)
2. **Scope of the scheme or system**
   Irrigation scheme ; flow-cum-storage ; C.C.A. 47,000 acres
3. **Source of supply**
   Kathani at Chowhela and Rajoli/Wainganga/Pranhita/Godavari
   Boria Nalla/Kathani/Wainganga/Pranhita/Godavari
   Utilisation upstream : nil
4. **Description of the reservoir or tank**

	Kathani at Chowhela	*Boria Nalla*	*Kathani at Rajoli*
Live storage (T.M.C.)	4.60	1.87	1.20
Dead storage ,,	0.30	0.12	0.40
Carry-over ,,	Nil	Nil	Nil
Annual reservoir losses (T.M.C.)	0.39	0.15	0.49
Filling period		15th June to end Oct.	
Depletion period		1st Aug. to 14th Feb.	
Catchment area (square miles)	109	33	240
Area submerged (acres)	3,590	2,000	4,300
Full reservoir level (R. L.)	880	814	750
Minimum pond level ,,	835	782	740

5. **Description of the headworks**

Dam :	earthen; 3,300 feet long; 105 feet high with dykes 1,800 feet and 4,000 feet long; 45 feet & 20 feet high	earthen; 5,000 feet long; 60 feet high	masonry; 2,000 feet long; 25 feet high with earthen flanks; 2,300 feet long; 17 feet high
Spillway :	masonry; 1,600 feet long; capacity 73,100 cusecs	masonry; 900 feet long; capacity 40,500 cusecs	masonry; 2,000 feet long; capacity 108,500 cusecs
Outlets :	regulators in right flank; capacity 500 cusecs	river sluice; capacity 500 cusecs	regulator in left flank; capacity 500 cusecs

6. **Description of the canals**
   Chowhela Canal (contour 20 miles and ridge 20 miles); right bank; unlined ; two seasonal; authorised capacity 500 cusecs
   Rajoli Canal (contour 30 miles and ridge 10 miles); left bank; unlined ; two seasonal; authorised capacity 500 cusecs

7. **(a) Nature of investigations carried out up-to-date**

Present proposals based mainly on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

	Chanda		*Total*
	Chowhela Canal	*Rajoli Canal*	
	............*thousand acres*........		
G.C.A.	82.0	93.0	175.0
C.C.A.	26.0	30.0	56.0
Deduct existing tank and well irrigation			9.0
Net C.C.A.			47.0

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	47,000 acres	100.0 percent
Rabi	47,000 „	100.0 „
Total	**94,000 „**	**200.0 „**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*	....		....*T.M.C.*....	
June	9.7	25.4	2.2		
July	16.0	34.2	8.2	1st Aug. to 14th Oct.	
August	14.0	31.8	7.5	2.77	0.43
September	7.2	16.0	1.1		
October	1.8	13.5	Nil		
November	0.3	3.6	,,	15th Oct. to 14th Feb.	
December	0.4	1.6	,,	5.03	0.47
January	0.6	2.3	,,		
February	0.9	3.3	,,		
March	0.7	5.1	,,	15th Feb. to 31st July	
April	0.9	3.1	,,	Nil	
May	0.9	8.9	,,		
Total	**53.4**			**7.80**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 20 percent, sandy loam to clayey loam 55 percent and clayey loam to clay 25 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Two seasonal*		*Kharif*				*Rabi*				*Total cropped area (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Others		*Chillies*		*Paddy*	*Pulses*	*Others*		*Jowar*	*Gram*	*Others*		
0.4	0.2	1.0	0.6	62.0	6.0	2.0	39.2	14.0	9.0	5.6	16.0	56.0

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T.acres)*	
Paddy		*Wheat*	*Gram*		
50.0	47.0	47.9	2.1	47.0	94.0

(b) Are there any rules for regulating crop pattern ?

No; but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	200	400	1.21	0.61	1.82
Wheat	—	150	—	1.62	1.62
Gram	—	400	—	0.61	0.61

Overall delta at canal head 1.91 feet

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

700 tanks, irrigating 8,000 acres, excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

500 wells each irrigating about 2 acres, excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects ; financial returns

Nil

23. Extent and type of area submerged by reservoir

600 acres in Madhya Pradesh and 9,290 acres in Maharashtra as follows:

	Kathani river near Chowhela		*Boria Nalla*	*Rajoli*
	Maharashtra	*Madhya Pradesh*	*Maharashtra*	*Maharashtra*
		acres		
Culturable	700	120	200	860
Forests	2,000	420	1,600	3,010
Waste	290	60	200	430
Total	**2,990**	**600**	**2,000**	**4,300**

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

POHR PROJECT

116C.3-G.9.M.42

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of scheme or system**

   Irrigation scheme; flow-cum-storage; C.C.A. 12,700 acres

3. **Source of supply**

   Pohar at Hanpaili/Wainganga/Pranhita/**Godavari**
   Karwaps Nalla at Makepaili/Pohar/Wainganga/Pranhita/**Godavari**
   Utilisation upstream: nil

4. **Description of the reservoir or tank**

	Karwaps Nalla	*Pohar Nalla*
Live storage (T.M.C.)	0.96	0.89
Dead storage ,,	0.07	0.13
Carry-over ,,	Nil	Nil
Annual reservoir losses (T.M.C.)	0.09	0.21
Filling period	..15th June to Oct....	
Depletion period	..1st Aug. to 14th Feb....	
Catchment area (square miles)	22	31
Area submerged (acres)	860	1,960
Full reservoir level (R.L.)	830	778
Minimum pond level ,,	780	760

5. **Description of the headworks**

Dam :	earthen; 5,000 feet long; 100 feet high	earthen; 2,800 feet long; 50 feet high
Spillway :	masonry waste weir; 700 feet long; capacity 30,400 cusecs	masonry; 850 feet long; capacity 36,400 cusecs
Outlets :	head regulator in left flank, capacity 250 cusecs	head regulator in right flank, capacity 250 cusecs

6. **Description of the canals**

   Hanpaili Canal (20 miles contour and 12 miles ridge); right bank; unlined; two seasonal; authorised capacity **250 cusecs**

   Makepaili Canal (contour); left bank; 8 miles long; unlined; two seasonal; authorised capacity **250 cusecs**

7. (a) **Nature of investigations carried out up-to-date**
Present proposals based mainly on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**
District Chanda

	Honpaili	*Makepaili*	*Total*
	............*thousand acres*............		
G.C.A.	48.5	6.0	54.5
C.C.A.	14.0	2.0	16.0
Deduct existing tank and well irrigation			3.3
Net C.C.A.			12.7

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	12,000 acres	94.5 percent
Rabi	12,000 ,,	94.5 ,,
Total	**24,000** ,,	**189.0** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*..........			......*T.M.C.*........	
June	9.6	19.1	2.2		
July	16.0	33.0	6.8		
August	13.5	27.2	5.1	1st Aug. to 14th Oct.	
September	7.0	13.5	1.3	0.71	0.22
October	2.0	9.8	Nil		
November	0.3	3.9	,,	15th Oct. to 14th Feb.	
December	0.3	1.1	,,	1.31	0.25
January	0.5	2.3	,,		
February	0.9	3.9	,,		
March	0.8	3.1	,,	15th Feb. to 31st July	
April	1.0	3.3	,,	Nil	
May	0.9	1.3	,,		
Total	**52.8**			**2.02**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 20 percent, sandy loam to clayey loam 55 percent and clayey loam to clay 25 percent

(b) Has any study been made of the likely effect of introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Two seasonal		*Kharif*				*Rabi*				*Total cropped area (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Chillies		*Paddy*	*Pulses*	*Others*		*Jowar*	*Gram*	*Others*		
0.8	0.1	62.0	6.0	2.1	8.9	14.0	9.0	6.1	3.7	12.7

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*		
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Grand Total (T. acres)*
Paddy		*Wheat*		
50.0	12.0	50.0	12.0	24.0

(b) Are there any rules for regulating crop pattern ?

No; but sanctions will be regulated to conform to the proposed crop pattern.

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	200	400	1.2	0.6	1.8
Wheat	—	150	—	1.6	1.6

Overall delta at canal head 1.9 feet

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

200 tanks, irrigating about 3,000 acres, area excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrrigated and the area irrigated therefrom

150 wells each irrigating 2 acres, area excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. **Not applicable**

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Submergence in Maharashtra as follows:—

	Karwapa storage	*Pohi storage*
	............*acres*.........	
Culturable	172	400
Forests	602	1,360
Waste	86	200
Total	**860**	**1,960**

24. to 26. Not available

27. Not applicable

28 Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

HUMAN PROJECT

117C.3-G.9-M.43

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; C.C.A. 32,100 acres

3. **Source of supply**

Human near Chirkada/Andhari/Wainganga/Pranhita/**Godavari**
Utilisation upstream: nil

4. **Description of the reservoir or tank**

Live storage	2.47 T.M.C.
Dead storage	0.91 „
Carry-over	Nil
Annual reservoir losses	1.05 „
Filling period	15th June to 14th Oct.
Depletion period	1st Aug. to 14th Feb.
Catchment area	383 square miles
Area submerged	6,270 acres
Full reservoir level	R.L. 705
Minimum pond level	R.L. 687

5. **Description of the headworks**

Dam : earthen; 4,000 feet long; 53 feet high
Spillway : masonry, waste weir; 1,950 feet long; capacity 137,000 cusecs
Outlets : head regulator in left flank; capacity 400 cusecs

6. **Description of the canal**

Human Canal (contour); left bank; 30 miles long; two seasonal; unlined; capacity 400 cusecs

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposal based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area and culturable commanded area, district-wise

District Chanda

G.C.A.	63,000 acres
C.C.A.	35,900 ,,
Area under well irrigation	3,800 ,,
Net C.C.A.	32,100 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Two seasonal	3,000 acres	9.3 percent
Kharif (Paddy)	21,000 ,,	65.4 ,,
Rabi	18,600 ,,	57.9 ,,
Total	**42,600 ,,**	**132.6 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
		inches		*T.M.C.*	
June	8.5	15.2	2.4	1st Aug. to 14th Oct.	
July	15.0	25.0	7.9	1.4	0.54
August	12.0	27.7	3.8		
September	8.0	12.1	1.5		
October	1.7	9.4	Nil	15th Oct. to 14th Feb.	
November	0.4	3.7	,,	2.2	0.52
December	0.4	1.5	,,		
January	0.4	2.0	,,		
February	0.8	3.9	,,	15th Feb. to 31st July	
March	0.8	3.5	,,	Nil	—
April	0.7	2.6	,,		
May	0.6	3.2	,,		
Total	**49.3**			**3.60**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 20 percent, sandy loam to clayey loam 55 percent and clayey loam to clay 45 percent

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Two seasonal		*Kharif*				*Rabi*			
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Total cropped area (T. acres)*
Chillies		*Paddy*	*Oilseeds*	*Others*		*Jowar*	*Others*		
1.1	0.4	31.0	5.5	7.5	15.0	36.5	18.4	19.7	35.9

15. (a) Proposed pattern of irrigated cultivation

Two seasonal		*Kharif*		*Rabi*			
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Grand Total (T. acres)*
Chillies		*Paddy*		*Jowar*	*Wheat*		
7.0	3.0	49.3	21.0	14.0	29.6	18.6	42.6

(b) Are there any rules for regulating crop pattern ?

No; but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Two seasonal	200	130	1.21	1.87	3.08
Paddy	200	400	1.21	0.61	1.82
Wheat	—	130	—	1.62	1.62
Jowar	—	200	—	1.22	1.22

Overall delta at canal head 1.94 feet

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

50 tanks, irrigating about 3,600 acres, area excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

110 wells, irrigating about 2 acres per well, area excluded from the C.C.A.

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

6,270 acres (culturable area 3,762 acres, forests 627 acres, waste lands 1,881 acres) in Maharashtra

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

ANDHARI PROJECT

118C.3-G.9-M.44

1. **Name of State** Maharashtra (formerly in Madhya Pradesh)

2. **Scope of the scheme or system**
   Irrigation scheme ; flow-cum-storage ; C. C. A. 52,500 acres

3. **Source of supply**
   Duni Nalla near Pet/Andhari/Wainganga/Pranhita/**Godavari**
   Kolsa Nalla near Baghadoh Chouki/Andhari/Wainganga/Pranhita/**Godavari**
   Andhari River near Nimba/Wainganga/Pranhita/**Godavari**
   Pick-up-weir on Andhari near Nandgul/Wainganga/Pranhita/**Godavari**

4. **Description of the reservoir or tark**

	Duni Nalla	*Kolsa Nalla*	*Nimba dam*
Live storage (T.M.C.)	0.51	0.67	4.11
Dead storage ,,	0.05	0.07	0.45
Carry-over ,,	Nil	Nil	Nil
Annual reservoir losses (T.M.C.)	0.06	0.11	0.67
Filling period		15th June to end of Oct.	
Depletion period		1st Aug. to 14th Feb.	
Catchment area (square miles)	17	26	175
Area submerged (acres)	510	1,070	5,820
Full reservoir level (R.L.)	745	725	676
Minimum pond level ,,	700	695	650
Dam :	masonry, 1,200 feet long, 75 feet high	earthen, 3,000 feet long, 75 feet high	earthen, 2 miles long, 60 feet high
Spillway :	masonry, 1,000 feet long, capacity 27,200 cusecs	800 feet long, capacity 33,300 cusecs	clear overall 200 feet long, capacity 91,700 cusecs
Outlets :		River sluices 600 cusecs each	

5. **Description of the headworks**
   Weir : 2,000 feet long (over flow section 1,500 feet) 30, feet high, capacity 104,000 cusecs
   Outlets, : head regulator in right flank, capacity 860 cusecs

6. **Description of the canal**
   Andhari Canal (contour); right bank, 50 miles long ; two seasonal; unlined ; capacity **860 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

Field investigation not yet undertaken, present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area and culturable commanded area, district-wise**

District Chanda

G.C.A.	85,000 acres
C.C.A.	60,000 „
Existing well & tank irrigation	7,500 „
Net C.C.A.	52,500 „

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated	*Intensity of irrigation*
Kharif	36,000 acres	68.6 percent
Rabi	36,000 „	68.5 „
Total	**72,000**	**137.1 „**

11. **Normal rainfall and river supply proposed to be diverted**

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	inches			*T.M.C.*	
June	8.0	15.2	2.4		
July	15.0	28.0	7.9		
August	12.0	27.7	3.8	Ist. Aug. to 14th Oct.	
September	8.0	12.1	1.8	2.19	0.24
October	1.8	9.4	Nil		
November	0.5	3.7	„	15th Oct. to 14th Feb.	
December	0.3	1.5	„	3.42	0.37
January	0.4	2.0	„		
February	0.8	3.9	„	15th. Feb to 31st. July.	
March	0.8	3.5	„		
April	0.6	2.6	„	Nil	—
May	0.7	3.2	„		
Total	**48.9**			**5.61**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Sandy to sandy loam 20 percent, sandy loam to clayey loam 35 percent and clayey loam to clay 45 percent

(b) Has any study been made of the likely effect of introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

continued below

Perennial		*Two seasonal*		*Kharif*				*Rabi*					*Total cropped area (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. aercs)*	
Others		*Others*		*Paddy*	*Tit*	*Others*		*Jowar*	*Gram*	*Linseed*	*Others*		
0.2	0.1	2.0	1.2	23.0	6.8	8.5	23.0	41.5	7.5	7.5	3.0	35.7	60.0

continued from above

15. (a) Proposed pattern of irrigated cultivation

Kharif		*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Paddy		*Wheat*	*Gram*		
50.0	36.0	33.3	16.7	36.0	72.0

(b) Are there any rules for regulating crop pattern?

No ; but sanctions will be regulated to conform to the proposed crop pattern

16. Duty and Delta at distributory head (as anticipated)

	Duty (acres per mean cusec)		*Delta (feet)*		
	Kharif	*Rabi*	*Kharif*	*Rabi*	*Total*
Paddy	200	400	1.2	0.6	1.8
Wheat	—	150	—	1.6	1.6
Gram	—	400	—	0.6	0.6

Overal delta at canal head 1.8 feet

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom.

700 tanks; irrigating 7,000 aeres, area excluded from the C.C.A.

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

250 wells ; irrigating 2 acres per well ; area excluded from the C. C. A.

18. Quantum of river supplies available in relation to withdrawals

- River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

	Duni Nalla	*Kolsa Nalla*	*Nimba dam*	*Pick-up-weir*
	acres			
Culturable area	—	—	220	1,000
Forest area	510	1,070	5,400	800
Waste land	—	—	200	200
Total	**510**	**1,070**	**5,820**	**2.000**

The entire submergence would be in Maharashtra

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

BANDIA HYDRO-ELECTRIC PROJECT

119C.3-G.11-M.47

1. Name of State Maharashtra (formerly in Madhya Pradesh)

2. Scope of the scheme or system

Hydro-electric scheme; power 16,000 kW. installed.

3. Source of supply

Bandia/Indravati/**Godavari**
Utilisation upstream: nil

4. Description of the reservoir or tank

Live storage	21.0 T.M.C.
Dead storage	2.1 ,,
Carry-over	3.2 ,,
Annual reservoir losses	3.36 ,,
Filling period	June to Sep.
Depletion period	June to May
Catchment area	640 square miles
Area submerged	18,000 acres
Full reservoir level	R.L. 857
Minimum pond level	R.L. 808

5. Description of the headworks

Dam : masonry with earthen flanks, 768 feet long, 151 feet high
Spillway : particulars not available
Outlets : 3 penstocks, capacity 900 cusecs each

6. Not applicable

7. (a) Nature of investigations carried out up-to date

Project report under preparation, surveys completed.

(b) Actual or probable date of beginning of construction

IV Plan

8. Not available

9. to 18. Not applicable

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Month	*Operation head (feet)*	*Supply passing through turbines (cusecs)*
June	103.5	920
July	102.5	930
August	115.0	828
September	131.0	726
October	138.0	695
November	136.0	700
December	132.5	718
January	129.5	735
February	126.0	755
March	122.0	780
April	117.0	814
May	111.0	857
		24.9 T.M.C.

20. Proposed disposal of tail-race waters

Tail-race waters will be let into the river

21. Quantum of river supplies available in relation to withdrawals

River supply data not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

The entire submergence of 18,000 acres would lie in Maharashtra, mostly forest land.

24. Total cost of the scheme

Rs. 267 lakhs

25. Financial return of the scheme
5 percent

26. Not applicable

27. Cost per kW. power produced
Rs. 1,680/-

28. Main features and purpose of the scheme
Power generation

MANJRA RIVER SCHEME

120C.3-G.4-My.1

1. **Name of State** Mysore (formerly in Hyderabad)

2. **Scope of the scheme or system**

   Irrigation scheme ; flow-cum-storage ; Ayacut 10, 000 acres

3. **Source of supply**

   Manjra near Kamlanagar/Godavari
   Utilisation upstream :
   existing : minor tanks only
   proposed : several schemes

4. **Description of the reservoir or tank**

   Catchment area 5,566 square miles, other particulars not available

5. **Description of the headworks**

   Particulars not available

6. **Description of the canals**

   Left Bank Canal (contour) ; length not yet determined ; perennial ; unlined ; authorised capacity 65 cusecs
   Right Bank Canal (contour); length not yet determined ; perennial ; unlined authorised capacity 60 cusecs

7. (a) **Nature of investigations carried out up-to-date**

   Field investigations not yet undertaken ; present proposals based on topo-sheet studies

   (b) **Actual or probable date of beginning of construction**

   VI Plan

8. **Probable date of beginning of operation**

   3rd year from start of construction

IRRIGATION ASPECTS

9. **Gross commanded area, culturable commanded area and Ayacut, district-wise**

District Bidar

G. C. A.	16, 800 acres
C. C. A.	12, 600 „
Ayacut	10, 000 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation on Ayacut*
Perennial	500 acres	5. 0 percent
Kharif	7, 000 ,,	70. 0 ,,
Rabi	2, 500 ,,	25. 0 ,,
Total	10, 000 ,,	100.0 ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	....	*inches*		.... *T.M.C.*	
June	4.0	5.8	2.3	0.16	0.49
July	8.0	16.7	2.9	0.30	0.90
August	5.5	14.1	1.4	0.30	0.90
September	8.0	26.7	4.0	0.30	0.93
October	2.3	5.6	0.1	0.29	0.87
November	0.9	13.9	Nil	0.19	0.59
December	0.3	1.5	,,	0.08	0.24
January	0.2	0.7	,,	0.08	0.24
February	0.4	1.0	,,	0.07	0.23
March	0.3	0.9	,,	0.02	0.06
April	0.9	1.8	0.1	0.01	0.03
May	1.0	1.7	Nil	0.01	0.03
Total	**31.8**			**1.81**	

12. Not available

13. (a) Characteristics of soils in the commanded area

The soils are of lateritic origin, bright red to pale red in colour; black soils, clayey to clay loam in texture, also occur

(b) Has any study been made of the likely effect of the introduction of irrgation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Kharif*				*Rabi*				
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres*	*Percentage of principal crops*			*Total area (T. acres)*	*Total cropped area (T. acres)*
Sugarcane		*Jowar*	*Ground-nut*	*Paddy and other*		*Jowar*	*Wheat*	*Pules and other Rabi*		
2.0	0.2	15.0	9.0	5.0	2.9	17.0	3.0	49.0	6.9	10.0

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*			*Rabi*			
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Grand Total (T. acres)*
Sugarcane		*Paddy*	*Others*		*Jowar*	*Wheat*		
5.0	0.5	50.0	20.0	7.0	20.0	5.0	2.5	10.0

(b) Are there any rules for regulating crop partern ?

Legislation is under consideration

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)				*Delta (feet)*				
Perennial	*Kharif*		*Rabi*	*Perennial*	*Kharif*		*Rabi*	*Overall*
	Paddy	*Others*			*Paddy*	*Others*		
75	55	150	120	8.9	5.5	1.2	2.0	4.2

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated there from

28 wells ; irrigating about 5 acres ; not included in the Ayacut

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power ; water supply (month-wise), if any, required for these aspects ; financial returns

Nil

23. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Provision of irrigation facilities to rain-fed cultivation

KARANJA PROJECT

121C.3-G.4-My.2

1. **Name of State** Mysore (formerly in Hyderabad)
2. **Scope of the scheme or system**

   Irrigation scheme; flow-cum-storage; Ayacut 48,000 acres
3. **Source of supply**

   Karanja near Belhally/Manjra/Godavari

   Utilisation upstream :

   existing : minor tanks

   proposed : Nagora tank
4. **Description of the reservoir or tank**

   Catchment area 784 square miles, other particulars not available
5. **Description of the headworks**

   Dam : earthen, 5,995 feet long, 51 feet high

   Spillway : ogee, 2,555 feet long, capacity 200,000 cusecs

   Head regulator : right side—3 vents, each 4 feet × 3 feet

   left side—1 vent, 2.5 feet × 3 feet
6. **Description of the canals**

   Left Bank Canal (contour); 26 miles long; perennial; unlined; authorised capacity **40 cusecs**

   Right Bank Canal (contour); 78 miles long; perennial; lined; authorised capacity **245 cusecs**

7. (a) **Nature of investigations carried out up-to-date**

   Preliminary surveys completed; estimate under preparation

   (b) **Actual or probable date of beginning of construction**

   III Plan

8. **Probable date of beginning of operation**

   4th year from beginning of construction

IRRIGATION ASPECTS

9. Gross commanded area, culturable commanded area and Ayacut, district-wise

District Bidar

	Left Bank Canal	*Right Bank Canal*	*Total*
	……thousand acres……		
G.C.A.	10.8	69.2	80.0
C.C.A.	8.1	51.9	60.0
Ayacut	6.5	41.5	48.0

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation on Ayacut*
Perennial	2,400 acres	5.0 percent
Kharif (Paddy)	4,800 „	10.0 „
„ (Others)	21,600 „	45.0 „
Rabi	19,200 „	40.0 „
Total	**48,000** „	**100.0** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*		*Capacity factor*	
	Normal	*Maximum*	*Minimum*	*Right Bank Canal*	*Left Bank Canal*	*Right Bank Canal*	*Left Bank Canal*
1	2	3	4	5	6	7	8
	……inches……			……T.M.C……			
June	4.0	5.9	2.3	0.32	0.06	0.50	0.58
July	8.0	16.7	2.9	0.59	0.10	0.90	0.93
August	5.5	14.1	1.4	0.59	0.10	0.90	0.93
September	8.0	26.7	4.0	0.57	0.10	0.90	0.96
October	2.3	5.6	0.1	0.43	0.07	0.66	0.65
November	0.9	13.9	Nil	0.53	0.09	0.83	0.87
December	0.3	1.5	„	0.45	0.07	0.69	0.65
January	0.2	0.7	„	0.45	0.07	0.69	0.65
February	0.4	1.0	„	0.40	0.07	0.81	0.72
March	0.3	0.9	„	0.08	0.01	0.12	0.09
April	0.9	1.8	0.1	0.04	0.01	0.06	0.10
May	1.0	1.7	Nil	0.04	0.01	0.06	0.09
Total	31.8			4.49	0.76		
Total for both canals				5.25 T.M.C.			

12. Not available

13. (a) Characteristics of soils in the commanded area

Soils are of lateritic origin; bright red to pale red in colour. There are also black soils; deep black to pale grey in colour; clayey to clay loam in texture.

(b) Has any study been made of the likely effect of the intorduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Kharif*				*Rabi*				*Total cropped area (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	
Sugarcane		*Jowar*	*Groundnut*	*Paddy and Others*		*Jowar*	*Wheat*	*Pulses and Others*		
2.0	1.0	15.0	9.0	5.0	13.9	17.0	3.0	49.0	33.1	48.0

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*			*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane		*Paddy*	*Others*		*Jowar*	*Cotton*		
5.0	2.4	10.0	45.0	26.4	30.0	10.0	19.2	48.0

(b) Are there any rules for regulating crop pattern ?

Legislation under consideration

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)				*Delta (feet)*				
Perennial	*Kharif*		*Rabi*	*Perennial*	*Kharif*		*Rabi*	*Overall*
	Paddy	*Others*			*Paddy*	*Others*		
75	55	150	120	8.9	5.5	1.8	2.0	2.5

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

Nil

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

71 wells irrigating 18 acres, not included in the Ayacut

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects ; financial returns

Nil

23. Extent and type of area submerged by reservoir

7,174 acres all in Mysore (dry 5,612 acres, wet 127 acres, unculturable 1,435 acres)

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

NAGORA TANK PROJECT

122C.3-G.4-My.3

1. Name of State Mysore (formerly in Hyderabad)

2. Scope of the scheme or system

Irrigation scheme; flow-cum-storage; Ayacut 5,200 acres

3. Source of supply

Madhure and Chitta Nallas near Nagora/Karanja/Manjra/**Godavari**

Utilisation upstream:

existing : minor tanks

proposed : nil

4. Description of the reservoir or tank

Particulars not yet worked out; catchment area 113 square miles

5. Description of the headworks

Particulars not available

6. Description of the canals

Left and Right Bank Canals (contour); Length not yet fixed; perennial; unlined; authorised capacity (combined) **65 cusecs**

7. (a) Nature of investigations carried out up-to-date

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Actual or probable date of beginning of construction

IV Plan

8. Probable date of beginning of operation

3rd year from begining of construction

IRRIGATION ASPECTS

9. Gross commanded area, culturable commanded area and Ayacut, district-wise

District Bidar

G.C.A.	8,600 acres
C.C.A.	6,500 ,,
Ayacut	5,200 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation on Ayacut*
Perennial	300 acres	5.8 percent
Kharif	3,600 ,,	69.2 ,,
Rabi	1,300 ,,	25.0 ,,
Total	**5,200 ,,**	**100.0**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*..........			.......*T.M.C.*......	
June	4.0	5.9	2.3	0.09	0.54
July	8.0	16.7	2.9	0.17	0.98
August	5.5	14.1	1.4	0.17	0.98
September	8.0	26.7	4.0	0.16	0.95
October	2.3	5.6	0.1	0.17	0.98
November	0.9	13.9	Nil	0.10	0.60
December	0.3	1.5	,,	0.04	0.23
January	0.2	0.7	,,	0.04	0.23
February	0.4	1.0	,,	0.03	0.19
March	0.3	0.9	,,	0.01	0.06
April	0.9	1.8	0.1	0.01	0.06
May	1.0	1.7	0.1	0.01	0.06
Total	**31.8**			**1.00**	

12. Not available

13. (a) Characteristics of soils in the commanded area

Soils are of lateritic origin, bright red to pale red in colour.

There are also black soils, deep black to pale grey in colour, clayey to clay loam in texture

(b) Has any study been made of the likely effect of the introduction of irrigation on soil characteristics ?

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Perennial		*Kharif*				*Rabi*				
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Percentage of principal crops*			*Total area (T. acres)*	*Total cropped area (T. acres)*
Sugarcane		*Jowar*	*Groundnut*	*Paddy & Others*		*Jowar*	*Wheat*	*Pulses & Others*		
1.9	0.1	15.0	9.0	4.9	1.5	17.0	3.0	49.2	3.6	5.2

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*			*Rabi*			
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Grand Total (T. acres)*
Sugarcane		*Paddy*	*Others*		*Jowar*	*Cotton*		
5.8	0.3	49.2	20.0	3.6	15.0	10.0	1.3	5.2

(b) Are there any rules for regulating crop pattern ?

Legislation under consideration

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)				*Delta (feet)*				
Perennial	*Kharif*		*Rabi*	*Perennial*	*Kharif*		*Rabi*	*Overall*
	Paddy	*Others*			*Paddy*	*Others*		
75	55	150	120	8.9	5.5	1.8	2.0	4.4

17. (a) Number of tanks in operation in the area proposed to be irrigated and the area irrigated therefrom

2 tanks irrigating 55 acres, excluded from the Ayacut

(b) Number of wells in operation in the area proposed to be irrigated and the area irrigated therefrom

7 wells irrigating 2 acres each, area excluded from the Ayacut

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

UPPER INDRAVATI 123C.3-G.11-0.1

1. **Name of State** Orissa

2. **Scope of the scheme or system**

Multi-purpose project; flow-cum-storage, irrigation, Ayacut 144,000 acres; power about 89,500 kW. installed

3. **Source of supply**

Indravati at Podamilli/**Godavari**

Utilisation upstream: minor irrigation only

4. **Description of the reservoir or tank**

Live storage	12 T.M.C.
Dead storage	1.6 ,,
Carry-over	Not yet worked out
Annual reservoir losses	Not yet worked out
Filling period	June to Sept.
Depletion period	Oct. to June
Catchment area	410 square miles
Area submerged	8,320 acres
Full reservior level	R.L. 2,100
Dead storage level	R.L. 2,000

5. **Description of the headworks**

Investigations in progress; canals will take off above a diversion weir to be constructed in the tail-race below the power house in the dam.

6. **Description of the canals**

There will be two canals, one on each bank; full supply level at head of canal about R.L. 1,000; other particulars not available.

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken, present proposals based on topo-sheet studies.

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area, culturable commanded area and Ayacut, district-wise

District	Kalahandi (Mahanadi basin)
G.C.A	193,000 acres
C.C.A.	144,000 „
Ayacut	144,000 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated annually	*Intensity of irrigation on Ayacut*
Perennial	14,400 acres	10.0 percent
Kharif	129,600 „	90.0 „
Rabi	43,200 „	30.0 „
Total	**187,200** „	**130.0** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*........			......*T.M.C.*......	
June	8.9	19.3	1.9		
July	17.9	33.8	8.6		
August	19.1	43.8	9.0		
September	10.2	30.6	1.4		
October	3.2	14.6	0.1		
November	0.7	4.3	Nil	Month-wise distribution not yet worked out	
December	0.3	1.1	„		
January	0.2	1.8	„		
February	0.5	3.4	„		
March	0.6	3.4	„		
April	1.5	4.9	„		
May	2.4	8.0	„		
Total	**65.5**				

12. — 13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Mostly cultivated under paddy, details not available

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane		*Paddy*		*Mixed crops*		
7.7	14.4	69.2	129.6	23.1	43.2	187.2

(b) Are there any rules for regulating crop pattern ?

No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
100	120	160	7.27	2.5	0.75	3.1

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Continuous draft about 800 cusecs-Annual diversion **25.1 T.M.C.**

20. Proposed disposal of tail-race waters

Will be used for irrigation by the proposed canals

21. Not available

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Submergence 13 square miles in Orissa, mainly forest and waste lands

24. to 27. Not available

28. Main features and purpose of the scheme

General development of agriculture and of power for industries

29. Special features of the scheme

About 25 T.M.C. will be diverted into the Mahanadi basin

INDRAVATI KOLAB PROJECT 124 C.3-G.11-0.2

1. **Name of State** Orissa

2. **Scope of the scheme or system**

Irrigation scheme ; flow-cum-storage ; Ayacut 312,000 acres

3. **Source of supply**

(A) Diversion weir on Indravati at Lamtaguda/**Godavari**
(B) Dam on Muran at Chupadi (Katragada)/Indravati/**Godavari**
(C) Dam on Telengiri at Raniguda/Indravati/**Godavari**
(D) Weir on tail-race of Upper Kolab Hydro-electric Project **(132 C. 3-G.12-0.10)**
(E) Weir on Kolab at Kotta/**Godavari**

The diversion weirs as per items A & E will catch the normal runoff of the stream. The diversion weir as per item D will divert the power releases from Kolab hydro-electric project, Utilisation upstream : information not available

4. **Description of the reservoir or tank**

	Dam at Katra Guda	*Dam at Raniguda*
Live storage (T.M.C.)	10.00	2.70
Dead storage ,,	1.50	0.40
Carry-over	Not available	Not available
Annual reservoir losses	Not available	Not available
Filling period	....July to Sept.....	
Depletion period	.....Oct. to June....	
Catchment area (square miles)	390	90
Area submerged	Not available	Not available
Full reservoir level (R.L.)	2,100	2,000
Minimum pond level ,,	2,000	1,970

5.-6. Not available

7. **(a) Nature of investigations carried out up-to-date**

Field investigation not yet undertaken ; present proposals based on topo-sheet studies (1" to 1 mile, survey sheets not available for the entire area)

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. Gross commanded area, culturable commanded area and Ayacut, district-wise

District	Koraput	
G.C.A.	480,600 acres	
C.C.A.	312,000 ,,	(taken as 65 percent of G.C.A.)
Ayacut	312,000 ,,	

10. Area proposed to be irrigated annually and intensity of irrigation

	For project based on item A, B, C and E of item 3(Ayacut 202, 000 acres)		*For project based on item D of item 3 (Ayacut 110, 000 acres)*	
	Area to be irrigated	*Intensity of irrigation*	*Area to be irrigated*	*Intensity of irrigation*
	....*thousand acres*..	.......*percentage*......	....*thousand acres*	....*percentage*......
Perennial	20.2	10.0	33.0	30.0
Kharif	181.8	90.0	77.0	70.0
Rabi	60.6	30.0	36.3	33.0
Total	**262.6**	**130.0**	**146.3**	**133.0**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..............*inches*.........			....*T.M.C.*..	
June	9.0	N.A.	N.A.		
July	16.3	,,	,,		
August	17.7	,,	,,		
September	11.3	,,	,,	Month-wise distribution not available	Not available
October	4.4	,,	,,		
November	1.4	,,	,,		
December	0.3	,,	,,		
January	0.2	,,	,,		
February	0.3	,,	,,		
March	0.8	,,	,,		
April	1.9	,,	,,		
May	2.9	,,	,,		
Total	**66.5**			**63.3**	

12. Not available

13. (a) Characteristics of soil in the commanded area

Generally black cotton soil

(b) Has there been any change in the soil characteristics since the introduction of irrigation

No

14. Existing pattern of cultivation in the area proposed to be irrigated

Mostly cultivated, rice is the principal crop, some sugarcane near river banks, details not available

15. Proposed pattern of irrigated cultivation

	Perennial		*Kharif*		*Rabi*			
	Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	*Grand Total (T. acres)*
	Sugarcane		*Paddy*		*Paddy*	*Others*		
For project based on item A,B,C, & E of item 3	7.7	20.0	69.2	181.8		23.1	60.6	262.6
For project based on D item c	22.6	33.0	52.6	77.0	9.8	15.0	36.3	146.3

(b) Are there any rules for regulating crop pattern ?

No

16. Duty and Delta at canal head (as anticipated)

For project D under item (3)

Duty (acres per mean cusec)				*Dalta (feet)*			
Perennial	*Kharif*	*Rabi*		*Perennial*	*Kharif*	*Rabi*	
		Paddy	*Others*			*Paddy*	*Others*
101	119	53	160	7.2	2.5	4.6	0.8

continued below

continued from above

For projects based on item at A, B, C, & E under item (3)

Duty (acres per mean cusec)			*Delta (feet)*		
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*
101	119	160	7.2	2.6	0.8

Overall delta 4.6 feet

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence in Orissa, all forest and waste land

24. to 27. Not available

28. Main features and purpose of the scheme

Part of Dandakaranya development to enable rain-fed cultivation to be converted to irrigated agriculture.

TUMARIA PROJECT

125C.3-G.11-0.3

1. **Name of State** Orissa

2. **Scope of the scheme or system**
Irrigation scheme; flow-cum-storage; Ayacut 16,800 acres

3. **Source of supply**
Guntat Nadi at Kusmigaon/Indravati/**Godavari**
Turi Nadi at Tumaria/Guntat/Indravati/**Godavari**
A small tributary at Putri/Turi/Guntat/Indravati/**Godavari**
Utilisation upstream: minor irrigation only

4. **Description of the reservoir or tank**

	Dam at Kusmigaon	**Dam at Tumaria**	**Dam at Putri**
Catchment area (square miles)	15.0	15.0	18.0

Other particulars not available

5.—6. Not available

7. **(a) Nature of investigations carried out up-to-date**
Field investigation not yet undertaken, present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area, culturable commanded area and Ayacut, district-wise**

District Koraput

G.C.A.	45,000 acres
C.C.A.	16,800 „
Ayacut	16,800 „

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated	*Intensity of irrigation on Ayacut*
Perennial	1,700 acres	10.1 percent
Kharif	15,100 „	89.9 „
Rabi	5,000 „	29.8 „
Total	**21,800** „	**129.8** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........inches..........			......T.M.C.....	
June	8.9	12.1	7.2		
July	17.9	24.2	10.3		
August	19.1	21.8	Nil		
September	10.2	30.7	,,		
October	3.2	14.5	,,	Month-wise distribution not available	
November	0.7	1.6	,,		
December	0.3	N.A.	,,		
January	0.2	1.8	,,		
February	0.5	N.A.	,,		
March	0.6	2.2	,,		
April	1.5	2.3	,,		
May	2.4	5.4	,,		
Total	**65.5**			**2.90**	

12.—13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Mostly cultivated area; main crop, paddy

15. Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*		*Grand total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane		*Paddy*		*Others*		
7.8	1.7	69.3	15.1	22.9	5.0	21.8

(b) Are there any rules for regulating crop pattern?

No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*		
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*
100	122	160	7.3	2.5	10.8
Overall Delta			3.1 feet		

17. Not available

18. Quantum of river supplies available in relation to withdrawals
River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns
Nil

23. Extent and type of area submerged by reservoir
Entire submergence within Orissa; forest and waste land; details not available

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme
Conversion of rain-fed cultivation to irrigated agriculture

BHASKAL PROJECT

126C.3-G.11-0.4

1. **Name of State** Orissa

2. **Scope of the scheme or system**
Irrigation scheme; flow-cum-storage; Ayacut 47,500 acres

3. **Source of supply**
Bhaskel at Mendura/Indravati/**Godavari**
Utilisation upstream: minor irrigation only

4. to 6. Catchment area 158 square miles; other particulars not available.

7. (a) **Nature of investigations carried out up-to-date**
Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area, culturable commanded area and Ayacut, district-wise**

District Koraput

G.C.A	78,300 acres
C.C.A.	47,500 „
Ayacut	47,500 „

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated annually	*Intensity of irrigation on Ayacut*
Perennial	4,700 acres	9.9 percent
Kharif	42,800 „	90.1 „
Rabi	14,300 „	30.1 „
Total	**61,800** „	**130.1** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*		....	........*T.M.C.*.........	
June	7.4	12.7	4.2		
July	16.4	24.9	7.0		
August	16.4	23.5	10.8		
September	11.8	26.5	3.8		
October	3.7	13.2	0.1	Month-wise distribution not available	
November	0.8	4.4	Nil		
December	0.1	1.3	„		
January	0.3	1.0	„		
February	0.4	1.8	„		
March	0.8	4.1	„		
April	1.8	7.5	0.4		
May	2.0	6.3	0.2		
Total	**61.9**			**8.68**	

12.—13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Mostly cultivated; main crop, paddy

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane		*Paddy*		*Others*		
7.6	4.7	69.3	42.8	23.1	14.3	61.8

(b) Are there any rules for regulating crop pattern ?

No

16. Duty and Delta at canal head (as anticipated)

Duty *(acres per mean cusec)*			*Delta* *(feet)*		
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*
99	113	160	7.4	2.7	0.8

Overall Delta 3.2 feet

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power ; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence consisting of forests and waste land, within Orrisa; other particulars not available

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

BELGAM-NILUNDI PROJECT

127C.3-G.11-0.5

1. **Name of State** Orissa

2. **Scope of the scheme or system**
   Irrigation scheme; flow-cum-storage; Ayacut 30,000 acres

3. **Source of supply**
   A sub-tributory of Belari Nadi at Pujariguda/Bhaskel/Indravati/**Godavari**
   Belari Nadi at Medana/Bhaskel/Indravati/**Godavari**
   Chitrangi Nadi at Nilundi/Bhaskel/Indravati/**Godavari**
   Angwajor at Palsda/Bhaskel/Indravati/**Godavari**
   Amrali Nadi at Belgam/Bhaskel/Indravati/**Godavari**
   Utilisation upstream: minor irrigation only

4 **Description of the reservoir or tank**

	Dam at Pujariguda	*Dam at Medana*	*Dam at Nilundi*	*Dam at Palsoda*	*Dam at Belgam*
Catchment area (square miles)	17.0	25.0	28.0	15.0	32.0

other particulars not available

5.—6. Not available

7. (a) **Nature of investigations carried out up-to-date**
   Field investigations yet to be undertaken; present proposals based on topo-sheet studies

   (b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area, culturable commanded area and Ayacut, district-wise**

District	Koraput
G.C.A.	43,000 acres
C.C.A.	30,000 ,,
Ayacut	30,000 ,,

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	3,000 acres	10.0 per cent
Kharif	27,000 „	90.0 „
Rabi	9,000 „	30.0 „
Total	**39,000 „**	**130.0 „**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	............*inches*..........			..........*T.M.C.*.........	
June	7.4	12.7	4.2		
July	16.4	24.9	7.0		
August	16.4	23.5	10.8		
September	11.8	26.5	3.8		
October	3.7	13.2	0.1	Month-wise distribution not available	
November	0.8	4.4	—		
December	0.1	1.3	—		
January	0.3	1.0	—		
February	0.4	1.8	—		
March	0.8	4.1	—		
April	1.8	7.5	0.4		
May	2.0	6.3	0.2		
Total	**61.9**			**5.48**	

12.—13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Mostly cultivated area; main crop paddy

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane		*Paddy*		*Others*		
7.7	3.0	69.2	27.0	23.1	9.0	39.0

(b) Are there any rules for regulating crop pattern ?

No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
99	113	160	7.4	2.7	0.8	3.2

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence, comprising of forests and waste land within Orissa, details not available

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

NANGI-SINGARI PROJECT 128C.3-G.11-0.6

1. **Name of State** Orissa

2. **Scope of the scheme or system**

Irrigation scheme; flow-cum-storage; Ayacut 16,250 acres

3. **Source of supply**

Nangi Nala at Kumar/Bhaskel/Indravati/**Godavari**
Singari Nala at Chatguda/Bhaskel/Indravati/**Godavari**
Gaijodi Nala at Singsara/Bhaskel/Indravati/**Godavari**
Utilisation upstream: minor irrigation only

4. **Description of the reservoir or tank**

	Kumar	*Chatguda*	*Singsara*
Catchment area (square miles)	31.0	24.0	16.0

other particulars not available

5.—6. Not available

7. (a) **Nature of investigations carried out up-to-date**

Field investigations not yet undertaken, present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area, culturable commanded area and Ayacut, district-wise**

District	Koraput
G.C.A.	42,000 acres
C.C.A.	16,250 „
Ayacut	16,250 „

10. Area proposed to be irrigated annually and intensity of irrigation

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	2,400 acres	14.8 per cent
Kharif	13,800 ,,	84.9 ,,
Rabi	5,700 ,,	35.1 ,,
Total	**21,900 ,,**	**134.8 ,,**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*..........			........*T.M.C.*..	
June	7.4	12.7	4.2		
July	16.4	24.9	7.0		
August	16.4	23.5	10.8		
September	11.8	26.5	3.8		
October	3.7	13.2	0.1	Month-wise distribution not available	
November	0.8	4.4	Nil		
December	0.1	1.3	,,		
January	0.3	1.0	,,		
February	0.3	1.8	,,		
March	1.8	4.1	,,		
April	1.8	7.5	0.4		
May	2.0	6.3	0.2		
Total	**62.8**			**2.2**	

12.—13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Mostly cultivated area; main crop paddy

15. (a) Proposed pattern of irrigated cultivation

Perennial			*Kharif*				
Percentage of principal crops		*Total area (T. acres)*	*Percentage of principal crops*				*Total area (T. acres)*
Sugarcane	*Garden*		*Paddy*	*Millet*	*Oilseed Groundnut*	*Others*	
3.7	7.3	2.4	44.5	7.4	7.4	3.7	13.8

continued below

continued from above

Rabi					*Grand Total (T. acres)*
Percentage of principal crops				*Total area (T. acres)*	
Wheat	*Dalva*	*Pulses*	*Others*		
11.1	3.7	7.4	3.8	5.7	21.9

(b) Are there any rules for regulating crop pattern?

No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)						*Delta (feet)*						
Perennial	*Kharif*		*Rabi*			*Perennial*	*Kharif*		*Rabi*			*Over-all*
	Paddy	*Others*	*Wheat*	*Paddy*	*Others*		*Paddy*	*Others*	*Wheat*	*Paddy*	*Others*	
178	133	489	209	63	282	4.1	2.3	0.4	1.4	3.8	0.6	2,4

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Submergence will be entirely in Orissa; forest and waste lands; details not available

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture; diversification of crops

PATTIA PROJECT

129C.3-G.11-0.7

1. **Name of State** Orissa

2. **Scope of the scheme or system**
Irrigation scheme; flow-cum-storage; Ayacut 7,800 acres

3. **Source of supply**
Ongi Nala near Pattia/Bhaskel/Indravati/**Godavari**
Utilisation upstream: minor irrigation only

4. **Description of the reservoir or tank**
Catchment area 22 square miles
other particulars not available

5.—6. Not available

7. **(a) Nature of investigations carried out up-to-date**
Field investigations not yet undertaken, present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area, culturable commanded area and Ayacut, district-wise**

District	Koraput
G.C.A.	16,000 acres
C.C.A.	7,800 ,,
Ayacut	7,800 ,,

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	800 acres	10.3 per cent
Kharif	7,000 ,,	89.7 ,,
Rabi	2,300 ,,	29.5 ,,
Total	**10,100** ,,	**129.5** ,,

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall* *Normal*	 *Maximum*	 *Minimum*	*River supply proposed to be diverted*	*Capacity factor*
1	2	3	4	5	6
	..........*inches*..........			..........*T.M.C.*........	
June	8.9	12.1	7.2		
July	17.9	24.2	10.3		
August	19.1	21.8	N.A.		
September	10.2	30.7	Nil		
October	3.2	14.5	N.A.	Month-wise distribution	
November	0.7	1.6	Nil	not available	
December	0.3	N.A.	„		
January	0.2	1.8	„		
February	0.5	N.A.	„		
March	0.6	2.2	„		
April	1.5	2.3	N.A.		
May	2.4	5.4	„		
Total	**65.5**			**1.35**	

12.—13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Mostly cultivated land; main crop paddy

15. (a) Proposed pattern of irrigated cultivation

Perennial *Percentage of principal crops* *Sugarcane*	 *Total area (T. acres)*	*Kharif* *Percentage of principal crops* *Paddy*	 *Total area (T. acres)*	*Rabi* *Percentage of principal crops* *Others*	 *Total area (T. acres)*	*Grand Total (T. acres)*
7.9	0.8	69.3	7.0	22.8	2.3	10.1

(b) Are there any rules for regulating crop pattern ?

No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
100	122	160	7.3	2.5	0.8	3.1

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence within Orissa; consists of forest and waste land; details not available

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

DASUPUR-MOHAN PROJECT 130C.3-G.11-0.8

1. **Name of State** Orissa

2. **Scope of the scheme or system**
Irrigation scheme; flow-cum-storage; Ayacut 6,100 acres

3. **Source of supply**
Jarandi Nalla at Dasupur/Indravati/**Godavari**
A small tributary at Mohan/Jarandi Nalla/Indravati/**Godavari**
Utilisation upstream : nil

4. **Description of the reservoir or tank**

	Dam at Dasupur	**Dam at Mohan**
Catchment area (square miles)	12	20

other particulars not available

5.—6. Not available

7. (a) **Nature of investigations carried out up-to-date**
Field investigations not yet undertaken, present proposals based on topo-sheet studies

(b) Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area, culturable commanded area and Ayacut, district-wise**

District Koraput

G.C.A.	7,000 acres
C.C.A.	6,100 ,,
Ayacut	6,100 ,,

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	600 acres	9.8 per cent
Kharif	5,500 ,,	90.2 ,,
Rabi	1,800 ,,	29.5 ,,
Total	**7,900** ,,	**129.5**

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..............inches.....	....	....	........T.M.C.........	
June	7.4	12.7	4.2		
July	16.4	24.9	7.0		
August	16.4	23.5	10.8		
September	11.8	26.5	3.8		
October	3.7	13.2	0.1		
November	0.8	4.4	Nil	Month-wise distribution not available	
December	0.1	1.3	,,		
January	0.3	1.0	,,		
February	0.4	1.8	,,		
March	0.8	4.1	,,		
April	1.8	7.5	0.4		
May	2.0	6.3	0.2		
Total	**61.9**			**11.1**	

12. to 14. Not available

15. Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane		*Paddy*		*Others*		
7.6	0.6	69.6	5.5	22.8	1.8	7.9

(b) Are there any rules for regulating crop pattern?

No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
99	113	160	7.4	2.7	0.8	3.3

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence within Orissa, forests and waste lands; details not available

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

JADAPARA PROJECT

131C.3-G.11-0.9

1. **Name of State** Orissa

2. **Scope of the scheme or system**
Irrigation scheme; flow-cum-storage; Ayacut 5,400 acres

3. **Source of supply**
Dhobighat Nalla at Jadapara/Indravati/**Godavari**
Utilisation upstream: minor irrigation only

4. **Description of the reservoir or tank**
Catchment area 18 square miles; other particulars not available

5.—6. Not available

7. (a) **Nature of investigations carried out up-to-date**
Field investigations not yet undertaken, present proposals based on topo-sheet studies

(b) **Actual or probable date of beginning of construction**
Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area, culturable commanded area and Ayacut, district-wise**

District Koraput

G.C.A.	9,000 acres
C.C.A.	5,400 „
Ayacut	5,400 „

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	500 acres	9.3 per cent
Kharif	4,900 „	90.7 „
Rabi	1,600 „	29.6 „
Total	**7,000 „**	**129.6 „**

11. Normal rainfall and river supply proposed to be diverted

Month	Rainfall			River supply proposed to be diverted	Capacity factor
	Normal	Maximum	Minimum		
1	2	3	4	5	6
	.... inches	....		........T.M.C......	
June	7.4	12.7	4.2		
July	16.4	24.9	7.0		
August	16.4	23.5	10.8		
September	11.8	26.5	3.8		
October	3.8	13.2	0.1	Month-wise distribution not available	
November	0.8	4.4	Nil		
December	0.1	1.3	,,		
January	0.3	1.0	,,		
February	0.4	1.8	,,		
March	0.8	4.1	,,		
April	1.8	7.5	0.4		
May	2.0	6.3	0.2		
Total	62.0			0.98	

12. to 14. Not available

15. Proposed pattern of irrigated cultivation

Perennial		Kharif		Rabi		Grand Total (T. acres)
Percentage of principal crops	Total area (T. acres)	Percentage of principal crops	Total area (T. acres)	Pecentage of principal crops	Total area (T. acres)	
Sugarcane		Paddy		Others		
7.1	0.5	70.0	4.9	22.9	1.6	7.0

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			Delta (feet)			
Perennial	Kharif	Rabi	Perennial	Kharif	Rabi	Overall
99	113	160	7.4	2.7	0.8	3.2

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence consisting of forests and waste land within Orissa, details not available

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

UPPER KOLAB HYDRO-ELECTRIC PROJECT 132C.3-G.12-0.10

1. Name of State Orissa

2. Scope of the scheme or system
Hydro-electric scheme; 101,000 kW. installed

3. Source of supply
Kolab at Pakki/Sabri/**Godavari**
Utilisation upstream: nil

4. Description of the reservoir or tank

Live storage	28.0 T.M.C.
Dead storage	Not yet determined
Carry-over	,,
Annual reservoir losses	,,
Filling period	June to Sept.
Depletion period	Oct. to June
Catchment area	618 square miles
Area submerged	Not yet determined
Full reservoir level	R. L. 2,825
Minimum pond level	Not yet determined

5.-6. Not available

7. (a) Nature of investigations carried out up-to-date
Field investigations have yet to be undertaken, present proposals based on topo-sheet studies

(b) Not available

8. Not available

9. to 18. Not available

POWER ASPECTS

19. River supply proposed to be diverted and operation head

Mean operation head	*Mean supply passing through turbines*
800 feet	1,100 cusecs
Annual	34.69 T.M.C.

20. Proposed disposal of tail-race waters

Will be let into the river

21. Quantum of river supplies available in relation to withdrawals

On the basis of observations made between 1921-22 and 1928-29 an average annual flow of 42.0 T.M.C. is available at the dam site, out of which 35 T.M.C. will be diverted for generation of power

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence, consisting of forest and waste land, within Orissa

24. to 27. Not available

28. Main features and purpose of the scheme

Production of power

PERSONPALLI PROJECT

133C.3-G.12-0.11

1. **Name of State** Orissa

2. **Scope of the scheme or system**

Irrigation scheme ; flow-cum-storage; Ayacut 17,600 acres.

3. **Source of supply**

A small tributary at Personpalli/Sabri/**Godavari**.

Tarvagu at Pegadpalli/Sabri/**Godavari**

Utilisation upstream: not known

4. **Description of the reservoir or tank**

Catchment area— Dam at Personpalli-40 square miles,
Dam at Pegadpalli-10 square miles,

other particulars not available

5.-6. Not available

7. **(a) Nature of investigations carried out up-to-date**

Field investigations not yet undertaken; present proposals based on topo-sheet studies

(b) Actual or probable date of beginning of construction

Not available

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area, culturable commanded area and Ayacut, district-wise**

District	*Koraput*
G.C.A.	27,000 acres
C.C.A.	17,600 „
Ayacut	17,600 „

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	1,800 acres	10.2 percent
Kharif	15,800 „	89.8 „
Rabi	5,300 „	30.1 „
Total	**22,900** „	**130.1** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*	*Capacity factor*
	Normal	*Maximum*	*Minimum*		
1	2	3	4	5	6
	..........*inches*..........			......*T.M.C.*......	
June	9.5	18.0	2.0		
July	18.5	33.0	7.8		
August	18.2	29.7	10.7		
September	12.2	22.9	2.3		
October	3.7	10.6	Nil	Month-wise distribution not available	
November	0.8	5.4	„		
December	0.1	1.6	„		
January	0.1	1.2	„		
February	0.1	0.5	„		
March	0.3	4.3	„		
April	1.4	3.5	„		
May	1.9	4.2	„		
Total	**66.8**			**2.92**	

12.-13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Mostly cultivated land; main crop paddy

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*		*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	
Sugarcane		*Paddy*		*Others*		
7.9	1.8	69.0	15.8	23.1	5.3	22.9

(b) Are there any rules for regulating crop pattern ?

No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)			*Delta (feet)*			
Perennial	*Kharif*	*Rabi*	*Perennial*	*Kharif*	*Rabi*	*Overall*
101	128	160	7.2	2.3	0.8	2.9

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power ; water supply (month-wise), if any, required for these aspects ; financial returns

Nil

23. Extent and type of area submerged by reservoir

Entire submergence in Orissa; details not available

24. to 26. Not available

27. Not applicable

28. Main features and purpose of the scheme

Conversion of rain-fed cultivation to irrigated agriculture

BALIMELA IRRIGATION SCHEME 134C.3-G.12-0.14

1. **Name of State** Orissa

2. **Scope of the scheme or system**

Irrigation ; flow-cum-storage ; C.C.A. 240,000 acres

3. **Source of supply**

Sileru at Balimela/Sabari/**Godavari**
Utilisation upstream:
existing : Machkund Hydro-electric project
and minor irrigation schemes
proposed : nil

4. **Description of the reservoir**

(common with Balimela Hydro-electric project *vide* **4C.2-G.12-A.4/0.1**)

Live storage	110.0 **T.M.C.**
Dead storage	26.0 „
Carry-over	20.7 „
Annual reservoir losses	7.4 „
Filling period	June to Sep.
Depletion period	Oct. to June
Catchment area	1,855 square miles
Area submerged	44,800 acres (all in Orissa)
Full reservoir level	R.L. 1,516
Minimum pond level	R.L. 1,443

5. **Description of the headworks**

(common upto tail-race of Balimela Hydro-electric project *vide* **4C.2-G.12-A.4/0.1**)

Dam : earthen, 6,090 feet long, 220 feet high
Spillway : masonry, 8 gates each 40 feet x 40 feet, total capacity 258,000 cusecs

River sluices : 4 numbers 12 feet x 8 feet each

One head race canal will take off from the Balimela Dam for generation of power at Balimela Power House. The tail-race waters are proposed to be picked up for irrigation by constructing a weir on Potteru/Sabari/**Godavari.**

Details of the weir not yet available

6. **Description of the canals**

Head race canal 12,200 feet long, open channel plus Tunnel 8,000 feet long, 22 feet diameter

Particulars of irrigation canal not available

7. (a) **Nature of investigations carried out up-to-date**

Only topo-sheet studies have been made for drawing up preliminary proposals for irrigation. Detailed investigations for the dam and power house have been completed.

(b) **Probable date of beginning of construction**

IV plan

8. Not available

IRRIGATION ASPECTS

9. **Gross commanded area, culturable commanded area, district-wise**

District	Koraput	
G.C.A.	303,100	acres
C.C.A.	240,000	„

10. **Area proposed to be irrigated annually and intensity of irrigation**

	Area proposed to be irrigated	*Intensity of irrigation*
Perennial	72,000 acres	30.0 percent
Kharif	168,000 „	70.0 „
Rabi	79,200 „	33.0 „
Total	**319,200** „	**133.0** „

11. Normal rainfall and river supply proposed to be diverted

Month	*Rainfall*			*River supply proposed to be diverted*
	Normal	*Maximum*	*Minimum*	
1	2	3	4	5
	..............inches	....		........T.M.C........
June	9.5	18.0	2.0	
July	18.5	33.0	7.8	
August	18.2	29.7	10.7	
September	12.2	22.9	2.3	
October	3.8	10.6	Nil	Monthly distribution not available
November	0.8	5.4	„	
December	0.1	1.6	„	
January	0.1	1.2	„	
February	0.1	0.5	„	
March	0.3	4.3	„	
April	1.1	3.5	„	
May	1.9	4.2	„	
Total	**66.5**			**62.8**

12.-13. Not available

14. Existing pattern of cultivation in the area proposed to be irrigated

Only about 15 percent of the area is cultivated, main crop Paddy ; the remaining 85 percent is waste land over grown with jungle and will need to be reclaimed

15. (a) Proposed pattern of irrigated cultivation

Perennial		*Kharif*		*Rabi*			*Grand Total (T. acres)*
Percentage of principal crops	*Total area (T. acres)*	*Percentage of principal crops*	*Total area (T. acres)*	*Percentage of principal crops*		*Total area (T. acres)*	
Sugarcane		*Paddy*		*Paddy*	*Others*		
22.6	72.0	52.6	168.0	9.8	15.0	79.2	319.2

(b) Are there any rules for regulating crop pattern ? No

16. Duty and Delta at canal head (as anticipated)

Duty (acres per mean cusec)				*Delta (feet)*				
Perennial Sugarcane	*Kharif Paddy*	*Rabi Paddy*	*Others*	*Perennial Sugarcane*	*Kharif Paddy*	*Rabi Paddy*	*Others*	*Overall*
101	128	53	200	7.2	2.3	4.5	2.1	4.5

17. Not available

18. Quantum of river supplies available in relation to withdrawals

River supply data not available

19. to 21. Not applicable

GENERAL

22. Aspects other than irrigation and power; water supply (month-wise), if any, required for these aspects; financial returns

Nil

23. to 27. Not available

28. Main features and purpose of the scheme

Reclamation of waste lands, rehabilitation of refugees from East Pakistan

TABLE I

Particulars of propoed major and medium schemes referred to in III plan but not yet approved for execution.

Index Number	*Name of scheme*	*Power installed (k.W.)*	*C.C.A. or Ayacut (acres)*	*Proposed annual irrigation (acres)*	*Proposed annual diversion* (T.M.C.)*
1	2	3	4	5	6
	SCHEMES INCLUDED IN THE PLAN				
	ANDHRA PRADESH		*Ayacut*		
1C.2-G.5-A.1	Godavari Canals Project (Pochampad) stage—I	—	340,000	340,000	65.8
2C.2-G.9-A.2	Nallavagu Project	—	5,900	6,200	1.0
3C.2-G.5-A.3	Suddavagu Project	—	18,000	18,000	2.6
4C.2-G.12-A.4/0.1	Guntewada/Balimela Hydro-electric Scheme (dam to be built jointly with Orissa)	180,000	—	—	*65.5*
	Total	**180,000**	**363,900**	**364,200**	**69.4**
					65,5
	MADHYA PRADESH				
5C.2-G.11-Ma.1	Narainpur Project	—	9,000	8,000	0.6
6C.2-G.11-Ma.2	Deodha Project	—	32,500	32,500	2.4
	Total	—	**41,500**	**40,500**	**3.0**
	MAHARASHTRA		C.C.A.		
7C.2-G.8-M.1	Upper Wunna Project	—	9,000	10,000	0.8
8C.2-G.7-M.2	Penganga Project	37,500		—	*25,2*
9C.2-G.7-M.3	Pus Project	—	43,600	36,500	3.3
10C.2-G.9-M.5	Bagh River Project	—	61,500	110,000	8.3
11C.2-G.9-M.5	Itiadoh Project	—	90,000	134,000	12.3
12C.2-G.9-M.6	Dina Project	—	50,100	38,400	2.5
	Total	**37,500**	**254,200**	**328,900**	**27.2**
					25.2

***Figures in italics are diversions for power generation only**

Table I—*contd.*

Index Number	*Name of scheme*	*Power installed (k.W.)*	*C.C.A. or Ayacut (acres)*	*Proposed annual irrigation (acres)*	*Proposed annual diversion (T.M.C.)*
1	2	3	4	5	6
	MYSORE				
	Nil				
	ORISSA				
4C.2-G.12-A.4/0.1	Balimela/Guntewada Project (Stage I— Power) (dam to be built jointly with Andhra Pradesh)	240,000	—	—	*65.5*
	Schemes on which a view has yet to be taken regarding their inclusion in III Plan				
	ANDHRA PRADESH				
			Ayacut		
13C.2-G.5-A.5	Mandamari	—	6,000	7,800	1.5
14C.2-G.9-A.6	Peddavagu (Adilabad)	—	33,000	33,000	7.0
15C.2-G.7-A.7	Satnala Project	—	12,700	12,700	0.9
16C.2-G.10-A.8	Kinnersani Project	—	10,000	10,000	6.6
	Total	—	**61,500**	**63,500**	**16.0**
	MAHARASHTRA				
			C.C.A.		
17C.2-G.1-M.7	Karanjwan Project—Stage I	—	140,700	110,900	14.4
18C.2-G.1-M.8	Jaikwadi Project—Stage I	—	62,900	44,600	8.9
19C.2-G.4-M.9	Ghirni Project	—	16,100	12,500	1.1
20C.2-G.8-M.10	Upper Wardha Project—Stage I	—	126,200	68,000	14.1
21C.2-G.7-M.11	Kayadhu Project	—	74,700	79,800	7.2
22C.2-G.7-M.12	Kuni Project	—	17,400	14,900	2.1
	Total	—	**438,000**	**330,700**	**47.8**
	Grand Total	**457,500**	**1,159,300**	**1,127,800**	**163.4** *156.2*

TABLE II

Particulars of proposed major and medium schemes not included in III Plan

Index Number	*Name of scheme*	*Power installed* *(k.W.)*	*C.C.A. or Ayacut (acres)*	*Proposed annual irrigation (acres)*	*Proposed annual diversion* (T.M.C.)*
1	2	3	4	5	6
	ANDHRA PRADESH		*Ayacut*		
1C.3-G.5-A.1	Godavari Canals Project (Pochampad) Stage II	128,500	1,555,000	1,593,000	229.2 *311.2*
2C.3-G.5-A.2	Godavari Canals Project (Pochampad) Stage III		100,000	300,000	170.2
3C.3-G.10-A.3	Inchampalli Project	600,000	300,000	450,000	110.0 *669.4*
4C.3-G.10-A.4	Singareddy Hydro-electric Scheme	210,000	—	—	*872.7*
5C.3-G.10-A.5	Ippur Reservoir Scheme	420,000	766,000	1,676,000	371.2 *820.7*
6C.3-G.10-A.6	Gutala Pumping Scheme	—	13,500	13,500	3.7
7C.3-G.10-A.7	Providing 6, Drumgates to Godavari Anicut	—	115,900	249,600	57.4
8C.3-G.4-A.8	Devnoor Hydro-electric Project	33,000	—	—	*45.0*
9C.3-G.4-A.9	Manjira Irrigation Scheme	—	22,500	22,500	4.5
10C.3-G.5-A.10	Kappalvagu Project	—	8,000	9,600	2.0
11C.3-G.5-A.11	Kuntala Hydro-electric Scheme	9,000			*3.9*
12C.3-G.6-A.12	Lower Maner Project	2,000	68,000	71,000	12.2
13C.3-G.9-A.13	Pranhita Project	300,000	150,000	250,000	57.7 *455.3*
14C.3-G.7-A.14	Penganga Project	—	30,000	30,000	5.9
15C.3-G.12-A.15	Lower Machkund Hydel Project	30,000	—	—	*46.7*
16C.3-G.12-A.16	Lower Sileru Hydro-electric Project	210,000	—	—	*84.4*
	Total	**1,942,500**	**3,128,900**	**4,665,200**	**1,024.0** *3,309.3*

**Figuers in italics are diversions for power generation only*

Index Number	*Name of scheme*	*Power installed (k.W.)*	*C.C.A. or Ayacut (acres)*	*Proposed annual irrigation (acres)*	*Proposed annual diversion (T.M.C.)*
1	2	3	4	5	6
	MADHYA PRADESH				
			C.O.A.		
17C.3-G.8-Ma.1	Wardha Scheme	2,000	5,200	6,300	0.5 *0.5*
18C.3-G.9-Ma.2	Upper Wainganga Project	7,500	135,600	178,700	19.7
19C.3-G.9-Ma.3	Dheria Nala Scheme		5,100	4,500	0.3
20C.3-G.9-Ma.4	Bijna Project		52,500	61,500	6.5
21C.3-G.9-Ma.5	Saliwara Scheme		8,700	5,500	0.5
22C.3-G.9-Ma.6	Halon Project		9.600	12,000	1.1
23C.3-G.9-Ma.7	Thanwar Scheme		9,000	12,000	1.4
24C.3-G.9-Ma.8	Chakor Nala Project		7,000	6,000	0.4
25C.3-G.9-Ma.9	Bargoor Nala Project**		6,300	5,000	0.3
26C.3-G.9-Mn.10	Dhanai Nala Project		10,000	12,000	0.8
27C.3-G.9-Ma.11	Uskal Scheme	2,000	5,600	6,000	0.5 *0.1*
28C.3-G.9-Ma.12	Nahara Hydel Scheme	7,700	—	25,000	2.9 *3.7*
29C.3-G.9-Ma.13	Murmari Project		32,000	11,000	1.0
30C.3-G.9-Ma.14	Bagh Right Bank Branch		37,700	32,400	*2.6*
31C.3-G.9-Ma.15	Deo Ama Son Scheme	20,200	6,000	10,000	3.7 *2.0*
32C.3-G.9-Ma.16/ M.34	Bawanthari Project (jointly with Maharashtra)		127,000	134,000	12.0
33C.3-G.9-Ma.17	Jam Project		14,000	7,000	0.5
34C.3-G.8-Ma.18	Sitakund Project**		5,600	3,700	0.3
35C.3-G.9-Ma.19	Dokdoh Project		7,800	6,000	0.4

** *Under correspondence between their Government and Planning Commission for inclusion in III Plan*

Index Number	*Name of scheme*	*Power installed (k.W.)*	*C.C.A. or Ayacut (acres)*	*Proposed annual irrigation (acres)*	*Proposed annual diversion (T.M.C.)*
1	2	3	4	5	6
36C.3-G.9-Ma.20	Mohgaon Project		20,000	24,600	2.4
37C.3-G.9-Ma.21	Pench Diversion Scheme		309,800	307,700	*29.7*
38C.3-G.9-Ma.22	Kulbehra Scheme	27,500	6,300	9,000	0.9
					9.8
39C.3-G.9-Ma.23	Umra Nala Project		17,000	8,100	0.7
40C.3-G.11-Ma.24	Indravati Hydel Project	541,000	—	—	*189.2*
41C.3-G.11-Ma.25/ M.46	Bhoopalapatnam (jointly with Maharashtra)	170,000	80,000	128,000	10.0
					252.3
42C.3-G.12-Ma.26	Goriabahar Scheme		10,000	9,900	0.9
43C.3-G.12-Ma.27	Motkot Project		21,000	17,000	1.5
44C.3-G.11-Ma.28	Jarandi Nala Project	—	10,500	12,500	1.5
45C.3-G.11-Ma.29	Markandi Project	—	37,000	37,000	3.7
46C.3-G.11-Ma.30	Tirka Nala Project		15,000	18,000	1.8
47C.3-G.11-Ma.31	Boroda-Waler and Upper Nibra Scheme	53,000	14,000	22,000	2.7
					16.3
48C.3-G.11-Ma.32	Gudra Hydel Project	10,000	—	—	*12.6*
49C.3-G.11-Ma.33	Dantewara Scheme		9,000	13,000	1.2
50C.3-G.11-Ma.34	Godri Nadi Project		7,000	9,000	0.8
51C.3-G.11-Ma.35	Bhanpur Project		12,600	12,100	0.9
52C.3-G.11-Ma.36	Mari Nadi Project		6,300	7,100	0.8
53C.3-G.11-Ma.37	Berudi Scheme	15,000	6,500	10,000	1.4
					14.2
54C.3-G.11-Ma.38	Tonda Nadi Scheme		5,400	5,000	0.4
55C.3-G.11-Ma.39/ M.45	Kotri-Nibra Hydel Scheme (jointly with Maharashtra)	93,000	—	—	*63.0*
56C.3-G.11-Ma.40	Boria Tibhu Project	—	31,500	12,500	1.0
57C.3-G.11-Ma.41	Parwi Tank Project		24,000	10,000	0.8
58C.3-G.11-Ma.42	Bhanupratap pur Project		17,400	10,000	0.8
59C.3-G.11-Ma.43	Hatkonda Scheme		14,700	5,000	0.3
60C.3-G.11-Ma.44	Kokral Scheme	3,000	6,000	5,000	0.5
					0.7

Index Number	*Name of scheme*	*Power installed (k.W.)*	*C.C.A. or Ayacut (acres)*	*Proposed annual irrigation (acres)*	*Proposed annual diversion (T.M.C.)*
1	2	3	4	5	6
61C.3-G.11-Ma.45	Jallavagu Scheme	2,700	8,400	12,500	1.4 *0.4*
62C.3-G.10-Ma.46	Talperu Scheme		6,000	5,000	0.5
63C.3-G.10-Ma.47	Mukpara Project	7,000	11,500	15,000	1.8 *1.4*
64C.3-G.10-Ma.48	Kormanar Scheme	1,000	5,000	4,800	0.3 *0.4*
65C.3-G.10-Ma.49	Vemkamadugu Project	—	10,500	4,800	0.3
66C.3-G.10-Ma.50	Joranvagu Project		18,900	16,500	1.6
67C.3-G.12-Ma.51/ 0.12	Sabari Multipurpose Project (jointly with Orissa)	250,000	800,000	1,060,000	113.2
68C.3-G.12-Ma.52/ 0.13	Konta Project (jointly with Orissa)	50,000	20,000	30,000	4.0
69C.3-G.12-Ma.53	Baru Nadi Project		40,800	31,500	2.6
70C.3-G.11-Ma.54	Kaklur-Mupari Scheme	7,300	40,800	20,000	2.5 *1.5*
71C.3-G.12-Ma.55	Barsipara Tank		12,000	7,000	0.6
72C.3-G.12-Ma.56	Gorali Naddi Project		11,900	13,000	1.3
73C.3-G.12-Ma.57	Sailervagu Project		19,400	18,800	1.5
74C.3-G.10-Ma.58	Ordeltong Scheme		5,000	5,000	0.4
75C.3-G.12-Ma.59	Janavagu Project	—	27,000	31,500	3.4
	Total	**1,269,900**	**2,202,800**	**2,506,500**	**255.4** ***568.1***

Index Number	Name of scheme	Power installed (K.W.)	C.C.A. or Ayacut (acres)	Proposed annual irrigation (acres)	Proposed annual diversion (T.M.C.)
1	2	3	4	5	6
	MAHARASHTRA		C.C.A.		
76C.3-G.1-M.1	Upper Godavari Project		157,000	222,600	26.6
77C.3-G.1.M.2	Jayakwadi Project Stage II	—	552,900	620,300	55.8
78C.3-G.1-M.3	Karanjwan Project Stage II	—	—	17,600	0.2
79C.3-G.1-M.4	Bharvir Project	—	43,600	27,200	2.9
80C.3-G.2-M.5	Pravara River Project	27,000	107,000	143,200	9.5 *9.0*
81C.3-G.3-M.6	Purna Canal Extension Project		26,000	26,000	2.3
82C.3-G.3-M.7	Kapra Project		17,100	15,500	1.1
83C.3-G.3-M.8	Kalyan Project		10,800	7,000	0.7
84C.3-G.3-M.9	Lower Dudna Project		115,000	123,000	12.5
85C.3-G.4-M.10	Dhanegaon Project		35,000	51,000	6.0
86C.3-G.4-M.11	Devnoor Project	33,000	80,000	53,000	9.2
87C.3-G.4-M.12	Tawarja Project		8,500	7,600	0.8
88C.3-G.4-M.13	Lower Tirna Project		81,400	73,900	7.3
89C.3-G.4-M.14	Lendi Project		56,500	89,000	7.5
90C.3-G.4-M.15	Manar Project Stage II		57,500	41,000	3.9
91C.3-G.8-M.16	Upper Wardha Project Stage II		60,500	34,400	2.9
92C.3-G.8-M.17	Bembala Project		79,000	76,000	5.1
93C.3-G.8-M.18	Kanholi Project		5,200	6,000	0.4
94C.3-G.8-M.19	Lower Wunna Project		139,800	120,000	13.6
95C.3-G.8-M.20	Dham Project		16,800	26,000	2.0
96C.3-G.8-M.21	Chargaon Project		14,900	18,400	1.0
97C.3-G.9-M.22	Chandai Project		8,300	11,200	0.6
98C.3-G.7-M.23	Dongargaon Project		86,900	98,000	8.2
99C.3-G.7-M.24	Penganga Irrigation Project		260,600	375,000	45.6
100C.3-G.7-M.25	Pimpri Barwat Project		31,200	42,000	2.5

Index Number	*Name of scheme*	*Power installed (K.W.)*	*C.C.A. or Ayacut (acres)*	*Proposed annual irrigation (acres)*	*Proposed annual diversion (T.M.C.)*
1	2	3	4	5	6
101C.3-G.7-M.26	Ar Project		27,200	26,600	2.7
102C.3-G.7-M.27	Waghari Project		22,700	22,700	2.1
103C.3-G.9-M.28	Lower Wainganga Project		147,200	240,000	19.0
104C.3-G.9-M.29	Pranhita Project	217,000	—	—	*189.9*
105C.3-G.9-M.30	Bagh Valley Project		25,500	15,000	1.6
106C.3-G.9-M.31	Eastern Bagh River Project		22,800	28,000	2.4
107C.3-G.9-M.32	Kanhan River Project	36,000	472,300	331,300	38.1
108C.3-G.9-M.33	Pench River Project	66,700	229,100	232,500	21.2 *23.4*
32C.3-G.9-Ma.16! M.34	Bawanthari Project (jointly with Madhya Pradesh)				
109C.3-G.9-M.35	Kolar Project		11,400	8,400	1.0
110C.3-G.9-M.36	Chulbund Project		5,500	10,500	0.8
111C.3-G.9-M.37	Sasakuran Nalla Project		17,100	32,000	2.6
112C.3-G.9-M.38	Satti River Project		25,900	45,000	3.8
113C.3-G.9-M.39	Tultuli Project		38,000	76,000	6.3
114C.3-C.9-M.40	Khobragadi Project		18,600	25,500	2.2
115C.3-G.9-M.41	Kathani Project		47,000	94,000	7.8
116C.3-G.9-M.42	Pohar Project		12,700	24,000	2.0
117C.3-G.9-M.43	Human Project		32,100	42,600	3.6
118C.3-G.9-M.44	Andhari Project		52,500	72,000	5.6
55C.3-G.11-Ma.39! M.45	Kotri Nibra Hydel Scheme (jointly) with Madhya Pradesh)				
41C.3-G.11-Ma.25! M.46	Bhoopalapatnam Project (jointly) with Madhya Pradesh)				
119C.3-G.11-M.47	Bandia Hydro-electric Project	16,000	—	—	*24.9*
	Total	**400,700**	**3,259,100**	**3,651,000**	**351.0** ***247.2***

Index Number	*Name of scheme*	*Power installed* (*K.W.*)	*C.C.A. or Ayacut* (*acres*)	*Proposed annual irrigation* (*acres*)	*Proposed annual diversion* (*T.M.C.*)
1	**2**	**3**	**4**	**5**	**6**
	MYSORE		**Ayacut**		
120C.3-G.4-My.1	Manjira Project	—	10,000	10,000	1.8
121C.3-G.4-My.2	Karanja Project	—	48,000	48,000	5.3
122C.3-G.4-My.3	Nagora Tank Project	—	5,200	5,200	1.0
	Total	—	**63,200**	**63,200**	**8.1**
	ORISSA		**Ayacut**		
123C.3-G.11-0.1	Upper Indravati Project	89,500	144,000	187,200	25.1
124C.3-G.11-0.1	Indravati-Kolab Project	—	312,000	408,900	63.3
125C.3-G.11-0.3	Tumaria Project	—	16,800	21,800	2.9
126C.3-G.11-0.4	Bhaskel Project	—	47,500	61,800	8.7
127C.3-G.11-0.5	Belgam-Nilundi Project	—	30,000	39,000	5.5
128C.3-G.11-0.6	Nangi-Singari Project		16,300	21,900	2.3
129C.3-G.11-0.7	Pattia Project	—	7,800	10,100	1.4
130C.3-G.11-0.8	Dasupur Mohan Project		6,100	7,900	1.1
131C.3-G.11-0.9	Jadapara Project	—	5,400	7,000	1.0
132C.3-G.12-.010	Upper Kolab Hydro-electric Project	101,000	—	—	*34.7*
133C.3-G.12-0.11	Personpalli Project		17,600	22,900	2.9
67C.3-G.12-Ma.51! 0.12	Sabari Multipurpose Project (jointly with Madhya Pradesh)				
68C.3-G.12-Ma.52! 0.13	Konta Project (jointly with Madhya Pradesh)				
134C.3-G.12-0.14	Balimela Irrigation Poject	—	240,000	319,200	62.8
	Total	**190.500**	**843,500**	**1,107,700**	**177.0** ***34.7***
	Grand Total	**3,803,600**	**9.497,500**	**11,983,600**	**1,815,5** ***4159.3***

Table III

Particulars of minor schemes referred to in III Plan but not yet approved for execution

Serial number	*Name of scheme*	*Name of sub-basin*	*Capacity tanks (M.C.ft)*	*Capacity diversion schemes (Cusecs)*	*C.C.A Or Ayacut (Acres)*	*Area proposed to be irrigated (acrm)*
1	2	3	4	5	6	7
	Schemes on which a View has yet to be taken by the Planning Commission regarding their inclusion in III Plan.					
	ANDHRA PRADESH					
	Karimnagar district					
1.	Mulavagu	G-6 Maner	375	—	2,750	2,750
	Khammam district					
2.	Bethampudi	G-10 Lower Godavari	303	—	2,000	2,000
	Total for Andhra Pradesh				**4,750**	**4,750**

Serial number	*Name of scheme*	*Name of subbasin*	*Capacity tanks (M.C. ft)*	*Capacity diversion schemes (Cusecs)*	*C. C. A. Or Ayacut (area)*	*Area proposed to be irrigated acrm*
1	2	3	4	5	6	7
	Schemes included in III Plan					
	MADHYA PRADESH				C. C. A	
	Balaghat District					
1.	Salebari tank	G.9 Pranhita	10	—	500	343
2.	Salangtola tank	„	15	—	550	400
3.	Ambamai Nala tank	„	75	—	2,500	2,200
	Total				**3,550**	**2,943**
	Bastar District					
1.	Fudpara tank	G.11 Indravati	20	—	546	491
2.	Sonbal tank	„	2		516	72
3.	Rajamunda tank	„	15	—	500	400
4.	Tarapur tank	„	15	—	500	400
5.	Kondhur tank	„	15	—	500	400
6.	Barsur tank	„	30	—	870	792
7.	Phakanjhore tank	„	160	—	2,250	1,800
	Total			—	**5,682**	**4,355**
	Betul District					
1.	Wardha Nala Tank	G.8 Wardha	30	—	780	500
	Chhindwara District					
1.	Kotalburdi tank	G.9 Pranhita	46	—	1,066	645
2.	Sethia tank	„	24	—	618	439
3.	Ridhora Regulator	„		11	1,516	1,037
4.	Umaria tank	„	19	—	533	406
5.	Rigankhapa tank	„	22	—	846	376
	Total				**4,579**	**2,903**
	Seoni District					
1.	Dala tank	„	43	—	700	500
2.	Chapara tank	„	35	—	960	700
3.	Ghutna tank	„	20	—	700	500
4.	Haranbhata tank	„	30	—	1,000	700
5.	Gangai Tila Regulator	„	—	3	500	300
6.	Mutia Nala Regulator	„	—	5	560	500
	Total				**4,420**	**3,200**
	Total for Madhya Pradesh				**19,011**	**13,901**

Serial number	*Name of scheme*	*Name of subbasin*	*Capacity tanks (M.C. ft*	*Capacity diversion schemes (Cusecs)*	*C.C.A. Or Ayacnt acres*	*Area Proposed to be irrigated (acres)*
1	.2	3	4	5	6	7
	MAHARASHTRA				C. C.A.	
	Ahmednagar district					
1.	Irrigation tank at Ambhore	G.2 Pravara	72	20	1,660	1,230
2.	Irrigation tank at Lahore	G.1 Upper Godavati	57	10	1,000	800
	Total				**2,660**	**2,030**
	Amravati district					
3.	Baslapur tank	G.8 Wardha	44		**850**	**690**
	Bhandhara district					
1.	Bhimalkasa tank	G.9 Pranhita	82		1,800	1,800
2.	Chikhalbari tank	,,	80		6,000	1,600
3.	Kaitasli tank	,,	25		625	500
4.	Rapari Khalerao tank	,,	76		1,825	1,512
5.	Nyharwani tank		50		1,250	1,000
6.	Tekritola tank	,,	50		2,000	1,550
7.	Salebardi tank	,,	58		925	1,000
8.	Jhasi tank	,,	49		1,215	972
9.	Bhanur tank	,,	30		500	600
10.	Sill-Ambadi tank	,,	104		750	750
11.	Manararh tank	,,	165		7,000	5,000
12.	Sangrampur tank	,,	397		4,000	2,500
	Total				**27,890**	**18,784**
	Buldhana district					
1.	Tank at Agephal	G.3 Purna	45		1,600	760
2.	Tank at Telhara	G.7 Penaanga	35		570	520
3.	Tank at Pangri	,,	49		1,200	964
	Total				**3,370**	**2,244**

Serial number	Name of scheme	Name of subbasin	Capacity tanks M.C.ft)	Capacity diversion schemes (Cusecs	C. C. A. Or Ayacut (acres)	Area Proposed to be irrigated (Acres)
1	2	3	4	5	6	7
	Chanda district					
1.	Katazari tank	G.9 Pranhita	43	—	4,233	650
2.	Kotwan tank	,,	49	—	1,600	980
3.	Bandhara at Bamni	,,		4	400	300
4.	Canalwara Nalla	,,	75		2,400	1.500
5.	Yerawagu Nalla	,,	50	—	1,777	610
6.	Ramdiai Nalla	,,	25	—	760	500
7.	Bhasmadham Nalla	,,	32	—	900	520
8.	Pandharkwada Nalla	,,	243	—	7,500	650
9.	Wanhori Nalla	,,	30	—	1,000	600
10.	Bandhara at Nalla	,,		5	1,000	400
11.	Bijurpallai Nalla	,,		5	800	400
12.	Awalmari Nalla	,,	35	—	750	700
13.	Umri tank	,,	114	—		2,277
14.	Alowhai tank	,,	90	—		1,885
15.	Ciregaon tank	,,	39	—	893	770
16.	Mindala tank	,,	34	—	537	537
17.	Colbhuj tank	,,	38	—	1,133	660
18.	Somda tank	,,	13	—	589	552
	Total				**26,272**	**14,491**
	Nagpur district					
1.	Kasarnala tank	G.9 Pranhita	60	—	1,690	1,200
2.	Paradsinala tank	G.8 Wardha	37	—	1,242	747
3.	Salaimondha tank	,,	75	—	1,300	1,500
4.	Dongartal tank	G.9 Pranhita	60	—	450	1,200
5.	Zilpa tank	,,	50	—	7,600	990
6.	Lakheri tank	,,	46	—	500	927
7.	Nandera tank	,,	70	—	1,300	1,395
8.	Khadki tank	,,	33	—	700	600
9.	Ramthi tank	,,	47	—	250	931
10.	Khairgaon tank	,,	137	—	5,000	2,750
11.	Jamphalpani tank	G.8 Wardha	150	—	3,750	3,000
12.	Umri tank	,,	225	—	6,000	4,500
13.	Gothagaon	G.9 Pranhita	145	—	3,625	2,900
	Total				**33,407**	**22,640**

Serial number	Name of scheme	Name of sub-basin	*Capacity tanks (M. Cft.)*	*Capacity Diversion schemes (cusecs)*	*C.C.A. or Ayacut (acres)*	*Area proposed to be irrigated (acres)*
1	2	3	4	5	6	7
	Nasik district					
1.	Bhandhra at Ambadahal	G.1 Upper Godavari	—	36	2,700	2,100
2.	Bhandhara at Deo river	„	—	36	2,000	1,000
	Total				**4,700**	**3,780**
	Yeotmal district					
1.	Takali tank	G.8 Wardha	121	—	2,560	2,505
2.	Muchi tank	„	50	—	983	875
3.	Shiniol tank	„	37	—	900	400
4.	Tank at Dudhe	G.7 Penganga	19	—	600	500
5.	Tank at Dahu	„		—	1,500	1,000
	Total				**6,543**	**5,025**
	Total for Maharashtra				**105,692**	**69,684**
	MYSORE				Ayacut	
	District wise distribution and other particulars not yet determined.					
	Total				**1,000**	**1,000**
	Rs. 10 lakhs to be spent in III Plan.					
	ORISSA				**Ayacut**	
1.	Kengorba	G.12 Sabari			500	500
2.	Buruda	„			700	700
3.	Eurudiput	„			500	500
4.	Ponjelur	„			500	500
5.	Maleswaram Irrigation Tank	„			500	500
6.	Pusigudam	„			1,500	1,500
	Total for Orissa				**4,200**	**4,200**
	Grand total				**134,723**	**93,535**

Table IV

Particulars of proposed minor schemes not included in III Plan

Serial number	*Name of scheme*	*Name of sub-basin*	*Capacity tanks (M. C. ft)*	*Capacity Diversion Schemes (Cusecs)*	*C.C.A. or Ayacut (acres)*	*Area proposed to be iirrgated (acres)*
1.	2.	3.	4.	5.	6.	7.
	ANDHRA PRADESH				**Ayacut**	
	Adilabad district					
1.	Chiklivagu Project	G.9 Pranhita	566		2, 865	2,865
2.	Yerravagu Project	,,	102		500	500
3.	Mathadivagu Project	G.7 Penganga	140		860	860
4.	Kalanadi Project	G.9 Pranhita	376		1,750	1,750
5.	Kanchampally Project (Kanchanpally, Chinnur)	G.5 Middle Godavari	—		1,238	1,238
6.	Kosin Project (Kosin—Khurd, Sirpur)	G.9 Pranhita	—		832	832
7,	Kermoni Project (Kermoni, Asifabad)	,,	—		767	767
8.	Waripet Project (Waripet, Lakshetipet)	G.5 Middle Godovari	—		375 660	375 660
9.	Chargaon Project (Sirpur)	G.9 Pranhita	—			
10.	Manigudam Project (Manigudam, Sirpur)	,,	—		386	386
11.	Ardiral Project (Ardiral, Sirpur)	,,	—		605	605
12.	Narsapur Project (Narsapur, Chinnor)	G.5 Middle Godavari	—		828	828
13.	Mathari vage Project (Gollopalli	,,	—		998	998
14.	Yerravagu Project (Rappur, Chinnur)	,,	—		734	734
15.	Ninvail vagu Project (Bapuram, Chinnur)	,,	—		1,180	1,180

Serial number	Name of scheme	Name of sub-basin	Capacity tanks (M.C. ft)	Capacity diversion schemes (Cusecs)	C.C.A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1.	2.	3.	4.	5.	6.	7.
16.	Kondapalli vagu Project (Kondapalli, Sirpur)	G.9 Pranhita	—		1,180	1,180
17.	Ambani Project (Ambani Kurdi, Kinvat)	G.7 Penganga	—		833	833
18.	Chinkar Project (Chinkar, Kinvat)	,,	—		1,112	1,112
19.	Monivanikher Project (Mohivani, Kinvat)	,,	—		1,547	1,157
20.	Palaiguda, Kinvat) (Palaigude, Kinvat)	,,	—		887	887
21.	Harrop Project Harrop Project	,,	—		1,576	1,576
22.	Vanigirini Project (Vengirini, Kinvat)	,,	—		1,128	1,128
23.	Pandra Projeet (Andoran, Nirmal)	G.5 Middle Godavari	—		1,516	1,516
24.	Suryapur Project (Suryapur, Nirmal)	,,	—		893	893
25.	Keshvpatnam Project (Dhar, Sirpur)	G.Pranhita	—		900	900
26.	Tiryan Project (Irkapalli, Asifabad)	G.Pranhita	—		1,500	1,500
27.	Rangampet Jalvagu Project (Rangampet, Chinnur)	G.5 Middle Godavari	—		345	345
28.	Laxmipurvagu Project (Laxmipur)	,,	—		1,080	1,080
29.	Pannaram Project (Pannaram, Sirpur)	G.9 Pranhita	—		1,600	1,600
30.	Kachilapur Project (Kachilapur, Both)	G.5 Middle Godavari				

Serial number	Name of scheme	Name of sub-basin	Capacity tanks (M. Cft)	Capacity Diversion Schemes (cusecs)	C. C. A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6	7
31.	Chotapurbada Project (Chotapurbada)	G.5 Middle Godavari	—		1,390	1,390
32.	Doangaom Project (Doangoam Nirmal)	,,	—		852	852
33.	Gutlarapalli Project (Gutlarapalli, Asifabad)	G.9 Pranhita	—		670	670
34.	Sonapur Project (Sonapur, Asifabad)	,,	—		470	470
35.	Maddimadugu Project (Gudipet, Asifabae	,,	—		1,200	1,200
36.	Dongrapalli Pro)cct (Laxchitipet, Asifabad)	,,	—		1,200	1,200
37.	Rampalli Project (Rampalli, Asifabad)	,,	—		570	570
38.	Laxmipur Project (Laxmipur, Asifabad)	,,	—		500	500
39.	Dharmaraopet Project (Dharmaraopet, Asifabad)	,,	—		860	860
40.	Narsapur Nala Project (Gopeet, Asifabad)	,,	—		800	800
41.	Pakadigudem (Rajura)	G. 7 Pengana	—		1,215	1215
42.	Ramlingampet project (Ramlingampet, Utnoor)	G. Middle Godavari	—		1,240	1,240
43.	Branch of Gudi Vagu Project (Kothapet, Laxchittipet)	,,	—		1,240	1. 240
44.	Ammerpet Project (Ammerpet, Kharpa)	,,	—		800	800
45,	Sorkas Project (Sorkas, Adilabad)	G.7 Penganga	—		650	650
46.	Mettavagu Project (Ankadi, Adilabad)	,,	—		1,270	1, 270
	Total				**47.202**	**47.202**

Serial number	Name of scheme	Name of sub-basin	Capacity tanks (M.C. ft)	Capacity Diversion Schemes (Cusecs)	C.C.A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6	7
	Hyderabad district					
1.	Nandivagu Project (V. Khaslabad, T q. Vikarabad)	G.4 Manjra	293		2,700	2,700
2.	Gungala Marpally Project (V.Gundlamarpally, Tq. Vikarabad)	,,			1,374	1,374
3.	Dargulapalli Project (Dargulapalli, Tq. Vikarabad)	,,	—		555	555
4.	Govindapur Anicut (V.Govindapur, Tq. Vikarabad)	,,	—		392	392
	Total				**5,021**	**5,0 21**
	Karimnagar district					
1.	Chandra Vagu Project (Ankshapur Tq. Sircilla)	G.6 Maner	15		430	430
2.	Branch of Pedda Vagu Project Bomana Metpally	G.5 Middle Godavari	114		975	975
3.	Jangla Nala Project (Jagtial)	G.5 Middle Godavari	149		1,200	1, 200
4.	Dharmaram Tank Project (Advipadra, Tq. Sircilla) Sircilla)	G.6 Maner	43		400	400
5.	Antharam Project (Anantharam Tq. Sircilla)	,,	111		668	668
6.	Mohidimada Project	,,	666		4,100	5, 000
7.	Morwancha	,,	762		3,750	3, 750

Serial number	Name of scheme	Name of sub-basin	Capacity tanks (M.Cft)	Capacity Diversion Schemes (cusecs)	C.C.A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6	7
8.	Hanmajipet vagu Project (Innugulla, Tircilla)	G.6 Maner	47		500	500
9.	Chitti Vagu Project (Domala, Tq. Sircilla)	,,	37		500	500
10	Malyal Vagu Project (Tarapalli, Sultanabad, Sultanabad)	,,	42		500	500
11	Array Vagu Project (Peddatumnla, Manthani)	,,	174		700	700
12.	Branch of Manair Project (Vallampet, Tq. Sircilla)	,,	—		2,200	2,000
13.	Pedda Vagu Project (Atmakur, Metpally)	G.5 Middle Godavari	—		3,950	3,950
14.	Kesaram Project (Kesaram, Manthani)	G.10 Lower Godavari	—		760	760
15.	Makka Vagu Project (Tirlamdi, Sircilla)	G.6 Maner)	—		750	750
16.	Neela Vagu Project (Ambal, Huzurabad)	,,	—		2,500	2,500
17.	Mulgupally Vagu Project (Mulgupally, Manthani)	G.10 Lower Godavari)	—		575	575
18.	Kolam Pet Vagu Project (Konnampet, Manthani)	,,	—		970	970
19.	Annaram vagu Project (Annaram, Manthani)	,,	—		550	550
20.	Hussainmia vagu Project Kudrupak, Sultanabad)	G.6 Maner	—		890	890

Serial number	Name of scheme	Name of sub-basin	Capacity tanks M.C. ft	Gapacity Diversion Schemes (Cusecs)	C C.A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6	7
21.	Arepally Yagu Project (Arepally, Jagtial)	G.5 Middle Godavari	—		390	390
22.	Branch of pedda Vagu Project (Motpally, Medapur)	„	—		925	925
23.	Jalgula Vagu Project Jalgula, Hazurabad	G.6 Maner	—		600	600
24.	Tegal Vagu Project (Pachamplli, Manthany)	G.10 Lower Godavari	—		1, 486	1,486
25.	Branch of Mohanrao Pet (Wadded, Jagtial)	G.5 Middle Godavari	—		300	300
26.	Peddapet Vagu Project (Peddapct, Manthani)	G. 10 Lower Godavari	—		910	910
	Total				**31,279**	**32,279**
	Khammam district					
1.	Edulavagu Project	„	268		3.600	3, 600
2.	Nallavagu Project	„	100		2,340	2,340
3.	Kaiperu Project	„	301		2,250	2,250
4.	Parantal cheru (Kondaigudam)	„	—		1,000	1,000
5.	Nalla Vagu Project (Ippalaudam)	„	—		2,340	2,340
6.	Edulla Vagu Project	„	—		2,000	2,000
7.	Tella Vagu Project	„	—		1,020	1,020
8.	Annapa Reddy Project (Annapa Reddy)	„	—		429	429
9.	Pollalagudam vagu Project (Polalagudam)	„	—		754	754
10.	Regalla Project Regalla	„	—		350	350
11.	Murki Togu (Murki Togia)	„ „	— —		350	350

Serial number	*Name of scheme*	*Name of sub-basin*	*Capacity tanks (M. Cft.)*	*Capacity Diversion Schemes (cusecs)*	*C.C.A. or Ayacut (acres)*	*Area proposed to be irrigated (acres)*
1	2	3	4	5	6	7
12.	Moti Project (Moti)	G.10 Lower Godavari	—		525	525
13.	Rallavagu Project (Kothur)	,,	—		410	410
14.	Gourarapu Vagu Projectc Rama-powram)	,,	—		1,600	1,600
15.	Chinnagubbala Mongi Vagu	,,	700		5,000	5, 000
16.	Peddavagu	,,	586		3,600	3,600
	Total				27,568	30,068
	Medak district					
1.	Nandivagu Project	G.4 Manjra	211		1,500	1,500
2.	Totapalli Project (V.Totpalli, Tq. Zahirabad)	,,	353		2,200	2,200
3.	Malgiripet Project (Tq. Zahirabad)	,,	147		1,500	1,500
4.	Bogalamplli Project (V.Boglampalli, Tq. Zahirabad)	,,	207		1,500	1,500
5.	Teegal Project (V.Itkial, Tq. Gajwail)	G.6 Maner	125		500	500
6.	Narsapuram Project (V.Narsapuram, Tq. Siddipet)	,,	—		580	580
7.	Kistareddipet Projet (V.Kistereddi, Tq. Sengareddy)	G.4 Manjra	—		1.000	1,000
8.	Khurji Project (V.Khurji, Tq. Jogipet)	,,	—		400	400

Serial number	*Name of scheme*	*Name of sub-basin*	*Capacity tanks (M.Cft)*	*Capacity Diversion Schemes (cusecs)*	*C.C.A. or Ayacut (acres)*	*Area proposed to be irrigated (acres)*
1	2	3	4	5	6	7
9.	Palwancha Project (V.Palwancha, Tq. Jogipet)	G.4 Manjra	—		800	800
10.	Malkapur Project (V.Malkapur, Tq. Zanirabad)	,,	—		625	625
11.	Chilmada Project (V.Chilmada, Tq. Zailrabad)	,,	—		560	560
12	Anicut across Nakka Vagu (V.Chitkur, Tq. Sangereddy)	,,	-		900	900
13.	Haldi Project	,,	279		3,000	3,00
	Total				**15,065**	**15,065**
	Nizamabad district					
1.	Gandhari Project	G.4 Manjra	—		1000	1,00
2.	Talab Khurd Project (V.Khurd, Tq. Madnur)	,,	—		1,000	1,000
3.	Anicut across course of Kamareddy Swrplus and Yellareddy (Polwanch)	G.6 Maner	—		2,000	2,000
4.	Anicut across Kanlas Nala (V.Knlas, Tq. Madnoor)	G.4 Manjra	—		1,000	1,000
5.	Boddi Hamidi Cheroo (V.Sirooda. Tq. Armoor)	G.5 Middle Godavari	89		874	874
6.	Muthavagu Project (V.Onajipet, Tq. Madnoor)	G.4 Manjra	—		1,160	1,160

Serial number	Name of scheme	Name of sub-basin	Capacity tanks (M.C.ft)	Capacity diversion schemes (cusecs)	C.C.A. or Ayacut (acress)	Area proposed to be irrigated (acres)
1	2	3	4	5	6	7
7.	Anthapur Project (V.Anthapur, Tq. Madnoor)	,,	—		775	775
8.	Branch of Nalla Vagu Project (V. Tatkal, Tp. Madnoor)	,,	—		728	728
9.	Branch of Kappal Vagu Project (V. Turpalli, Tq. Kamareddy)	G.6Maner	—		860	860
10.	Malkapuram Project (V.Malkapuram)	G.5 Middle Godavari)	—		910	910
11,	Branch of Konlar Nalla	G.4 Manjra	—		820	820
12.	Branch of peddavagu Project (V. Konapur, Tq. Kamareddy)	,,	—		800	800
13.	Anicut across Kappal Vagu (V. Mutha)	,,	—		2,500	2,500
	Total				14.427	14.427

Serial number	*Name of scheme*	*Name of sub-basin*	*Capacity tanks (M.C. ft)*	*Capacity diversion schemes (cusecs)*	*C.C.A. or Ayacut (acres)*	*Area proposed to be irrigated (acres)*
1	2	3	4	5	6	7
	Warangal district					
1.	Anicut across Dayyam Vagu (Rangapur, Tq. Mulug)	G.10 Lower Godavari	—	10	1,145	1,145
2.	Vatti Vagu Project (Chinampalli, Mulug)	G.6 Maner	—		687	687
3.	Lakhnawaram Project (Mukthapuram)	,,	—		687	687
4.	Chinnavagu Project (Malyal)	G.10 Lower Godavari	—		670	670
5.	Gandam Chittavagu Project (V. Jallapally)	,,	—		645	645
6.	Dodla Project (Dodla)	,,	—		860	860
7.	Madawaram Project (Madaram)	,,	—		500	500
8.	Baswannapet Project (Baswannapet)	,,	—		1,230	1,230
9.	Suddavagu Project (Gowraram)	,,	—		1,380	1,380
10.	Branch of Thunnallavagu Project (Bayakpet)	,,	—		658	658
11.	Vichirani Project (V. Vichirani, Tq. Jangaon)	,,	—		680	680
12.	Marikonkal Project (V. Marikonkal, Tq. Jangoan)	,,	—		680	680
13.	Karlapalli Vagu Project	,,	—		2,550	2,550
	Total				**12,372**	**12,372**
	Total for Andhra Pradesh				152,934	156,334

Serial number	Name of scheme	Name of sub-basin	Capacity tanks (M.C ft)	Capacity Diversion Schemes (cusecs)	C.C.A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6	7
	MADHYA PRADESH					
	Balaghat district					
1.	Garra	G.9 Pranhita	200		4,000	3,200
2.	Phandki	,,	70		1,200	1,000
3.	Lilameta	,,	50		1,000	800
4.	Khursura	,,	150		3,000	2,200
5.	Kanari	,,	160		3,000	2,400
6.	Khami	,,	130		2,500	2,000
7.	Deori	,,	80		2,000	1,200
8.	Bodalkasa	,,	300		4,800	4,500
9.	Pujari Tola	,,	50		800	700
10.	Barkhu	,,	150		2,500	2,300
11.	Umardoni	,,	100		2,500	1,500
12.	Kategaon	,,	70		1,500	1,000
13.	Dulhapur	,,	20		500	350
14.	Mirdontola	,,	20		500	350
15.	Bartola	,,	20		500	350
16.	Tusar Nala	,,	50		900	800
17.	Naka Tola	,,	30		600	500
18.	Khursitola	,,	70		1,300	1,000
19.	Khandaphari	,,	70		1,300	1,000
20.	Risewada	,,	70		1,300	1,000
21.	Chirchira	,,	130		1,800	1,600
	Total				**37,500**	**29,750**

Serial number	Name of scheme	Name of sub-basin	Capacity tanks (M.C ft)	Capacity Diversion Schemes (cusecs)	C.C.A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6	7
	Bastar District					
1.	Jorenga	G.11 Indravati	180		3,000	2,700
2.	Rajgaon	,,	60		2,000	1,000
3.	Pandewar	,,	240		4,000	3,600
4.	Samlur	,,	180		3,000	2,700
5.	Pharaspal	,,	100		2,000	1,600
6.	Satna Weir	,,	—		3,000	2,000
7.	Penwari	,,	160		3,000	2,400
8.	Topal	,,	240		4,500	3,600
9.	Kesal	,,	120		2,300	1,800
10.	Surewali	,,	100		2,200	1,500
11.	Sureli	,,	300		5,000	4,500
12.	Khasgaon	,,	100		1,700	1,500
13.	Chikli	,,	50		800	800
14.	Pupgaon	,,	90		1,500	1,350
15.	Kawagaon	,,	30		600	500
16.	Rajpur	,,	240		4,000	3,600
17.	Timri	,,	180		3,000	2,700
18.	Khale Bendi	,,	100		2,000	1,600
19.	Korkoti	,,	200		3,500	3,100
20.	Gaurbahar	,,	300		5,000	4,200
21.	Seonipal	,,	200		4,000	3,200
22.	Batrali	,,	100		2,000	1,600
23.	Birapara	,,	70		1,800	1,000
24.	Korhokera	,,	50		1,200	800
25.	Bodagutta	,,	40		600	600
26.	Gattagudam	,,	50		800	800
27.	Chintapalli	,,	50		700	700
28.	Kaika	,,	150		2,500	2,250
29.	Karenar	,,	60		900	900
30.	Borjay	,,	50		700	700
31.	Itpal	,,	50		800	800
32.	Lingagiri	,,	150		2,600	2,300
33.	Timmapur	,,	90		1,500	1,350
34.	Chinnapunnru	,,	60		1,000	1,000

Serial number	*Name of scheme*	*Name of sub-basin*	*Capacity tanks (M.Cft)*	*Capacity Diversion Schemes (acress)*	*C.C.A. or Ayacut (acress)*	*Area proposed to be irrigated (acres)*
1		2	3	4	5	6
35.	Chinna Gelur	G.11 Indravati	40		600	600
36.	Polam Palli	,,	40		600	600
37.	Galagun	,,	60		1,000	1,000
38.	Newgangar	,,	200		4,000	3,000
39.	Chitringi Nala	,,	120		2,000	1,800
40.	Boligura	,,	240		4,500	3,600
41.	Bhond	,,	100		1,800	1,500
42.	Mangrapal	,,	100		2,000	1,600
43.	Sivisguna	,,	300		5,000	4,500
44.	Tadkapal	,,	100		2,200	1,500
45.	Chimili	,,	50		700	700
46.	Rajpenta	G.10 Lower Godavari	30		500	500
47.	Silgor	,,	50		800	800
48.	Pedda Bodkel	,,	50		700	700
49.	Gondpalli	G.12 Sabari	70		1,200	1,000
50.	Argatta	,,	50		700	700
51.	Bodiguda	,,	50		800	800
52.	Dubboatola	,,	70		1,200	1,000
53.	Nagalgonda	,,	40		600	600
54.	Malengar Weir	,,	—		3,500	2,800
55.	Murtanda	,,	120		2,000	1,800
56.	Maghur	G.11 Indravati	30		500	500
57.	Hurdeli	,,	50		800	800
58.	Hanker	,,	50		1,000	800
59.	Dhorkatta	,,	30		500	500
60.	Kondrunj	,,	30		600	500
61.	Joretola	,,	50		1,200	800
62.	Parbheli	,,	50		1,000	800
63.	Saindri Nala	,,	200		4,500	3,000
64.	Dorde	,,	60		1,000	900
65.	Palachur	,,	40		1,000	600
66.	Jatawara	,,	50		1,500	800
67.	Chahchar	,,	120		3,000	1,800
68.	Katel	,,	50		800	800

Serial number	Name of scheme	Name of sub-basin	Capacity tanks (M.Cft)	Capacity Diversion Schemes (cusecs)	C.C.A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6	7
69.	Sukhai	G.11 Indravati	85		2,000	1,600
70.	Gamre	,,	25		500	400
71.	Chhindapal	,,	80		1,500	1,200
72.	Surungdah	,,	20		500	400
73.	Michgaon	,,	50		900	800
74.	Jarkatta	,,	20		500	350
75.	Ainhurtola	,,	20		500	300
76.	Pahar	,,	30		600	500
77.	Mungwal	,,	105		2,000	1,600
78.	Telamma	,,	40		650	650
79.	Tekadhora	,,	30		500	500
80.	Kehkan Dongri Tank I	,,	50		800	800
81.	Kehkan Dongri Tank II	,,	30		500	500
82.	Mattimarka	,,	30		500	500
83.	Rudraram	,,	80		1,200	1,200
84.	Cherupalli	,,	70		1,200	1,000
85.	Dampavi	,,	100		1,800	1,500
86.	Burgudom	,,	30		500	500
87.	Minur	,,	100		1,500	1,500
88.	Kandala	,,	50		800	800
89.	Mariwada	,,	170		3,500	2,500
90.	Pedda Jojar	,,	50		1,000	800
91.	Pusnar	,,	80		1,500	1,200
92.	Muhander	,,	100		2,000	1,500
93.	Kodoli	,,	50		1,000	800
94.	Masodi	,,	50		1,000	800
95.	Pharaspal	,,	50		1,000	800
96.	Koripara	G.10 Lower Godavari	60		900	900
97.	Aretongu	,,	100		1,800	1,500
98.	Bot-tongu	,,	30		500	500
99.	Uta-vagu	,,	70		1,000	1,000
100.	Palachelama	G.11 Indravati	70		1,000	1,000
101.	Gumka	,,	230		4,000	3,200
102.	Kanjamipara	,,	100		1,800	1,500
103.	Dongripara	,,	40		700	700

Serial number	Name of scheme	Name of sub-basin	Capacity tanks (M.C ft)	Capacity Diversion Schemes (cusecs)	C.C.A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6	7
104.	Kuakonda	G.11 Indervati	40		600	600
105.	Gadapar	,,	40		700	700
106.	Tikanpal	,,	300		4,800	4,300
107.	Madakkapara	,,	40		600	600
108.	Pirnar	,,	80		1,500	1,200
109.	Arjalpara	,,	170		2,800	2,500
110.	Turem	,,	240		4,000	3,600
111.	Kapanar	,,	180		3,000	2,700
112.	Ermapara	,,	130		2,200	2,000
113.	Kodnar	,,	300		5,000	4,500
114.	Tondapal	,,	100		1,800	1,500
115.	Kesapur	,,	70		1,500	1,000
116.	Manjarras	,,	130		2,500	2,000
117.	Badam	,,	60		900	900
118.	Kumli	,,	300		4,800	2,500
119.	Nanganar	,,	30		1,000	450
120.	Sargipal	,,	300		5,000	4,500
121.	Korta	,,	200		2,500	2,200
122.	Metawada	,,	70		1,500	1,000
123.	Kutaguda	,,	170		3,000	2,500
124.	Bodo Puspal	,,	60		1,200	900
125.	Bijalgur	,,	30		500	400
126.	Peddapara Tikampal	G.12 Sabari	60		1,000	900
127.	Palnar	,,	60		1,200	1,000
128.	Govinpal	,,	300		5,000	4,500
129.	Peddapara Maroki	,,	70		1,000	1,000
130.	Kankipara	,,	100		2,000	1,500
131.	Madakamipara	,,	50		800	700
132.	Kharka	,,	70		1,200	1,000
133.	Sirsatti	,,	80		1,500	1,200
134.	Nagaram	,,	70		1,200	1,000
135.	Dudiras	,,	100		2,000	1,500
136.	Bhusaras	,,	40		600	600
137.	Kondanpal	,,	200		3,600	3,000
138.	Borkaipara	,,	100		2,000	1,500

Serial number	Name of scheme	Name of sub-basin	Capacity tanks (M.Cft)	Capacity Diversion Schemes (cusecs)	C.C.A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6	7
139.	Pirmapara	G.12 Sabari	20		500	300
140.	Jangampal	,,	80		1,500	1,200
141.	Lakapal	,,	100		2,000	1,500
142.	Birsatpal	,,	40		600	600
143.	Gariapal	,,	70		1,200	1,000
144.	Durvaras	,,	160		3,000	2,400
145.	Chandragiri	,,	40		1,200	600
146.	Dhruvapara	,,	30		800	500
147.	Solpiguda	,,	50		1,000	700
148.	Malguzarpara	,,	300		4,800	3,900
149.	Ravatpara	,,	300		5,000	4,000
150.	Ellingnar	,,	20		500	300
151.	Kalingawan	,,	130		2,500	2,000
152.	Jangampai	,,	80		1,500	1,200
153.	Paliam Tank I	,,	40		800	600
154.	Paliam Tank II	,,	40		800	600
155.	Tetao	,,	60		900	900
156.	Kavli Khurd	,,	100		3,500	2,700
157.	Potiyapal Feeder	,,	80			
158.	Koleng	,,	70		1,000	1,000
159.	Bagbera	G.11 Indravati	110		1,500	1,500
160.	Motimpara	,,	140		2,000	2,000
161.	Barbultar	,,	250		3,500	3,500
162.	Raktipara	,,	250		3,500	3,500
163.	Harawel	,,	210		3,000	3,000
164.	Sana Deoda	,,	100		1,800	1,300
165.	Baikguda	,,	50		1,200	800
166.	Jaitgu	,,	140		3,000	2,000
167.	Damaguda	,,	100		1,300	1,300
168.	Madevaguda	,,	50		1,000	800
169.	Nilamdippa	G.10 Lower Godavari	210		3,000	3,000
170.	Goddel Sari Anicut	,,	280		4,000	4,000
171.	Singeram	,,	90		1,400	1,200

Serial number	Name of scheme	Name of sub-basin	Capacity tanks (M.Cft)	Capacity Diversion Schemes (cusecs)	C.C.A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6	7
172.	Mami di gudam	G.10 Lower Godavari	210		3,000	3,000
173.	Machen tangu	,,	180		3,000	2,800
174.	Dorramangi	,,	140		2,000	2,000
175.	Tiganpatti	,,	110		1,500	1,400
176.	Bodam Raju	,,	110		1,500	1,500
177.	Korajugudem	G.12 Sabari	190		3,000	2,500
178.	Maitavagu	,,	210		3,000	3,000
179.	Bandà	,,	150		2,500	2,400
	Total				**329,950**	**278,200**
	Betul District					
1.	Maru	G.8. Wardha	180		3,000	2,700
2.	Sawasan	,,	50		1,000	800
3.	Wolni	,,	150		2,500	2,200
4.	Saonri	,,	100		2,000	1,600
5.	Piparia	,,	60		1,300	1,000
6.	Dahawa	,,	30		1,000	500
7.	Parad Singa	,,	180		3,500	2,800
8.	Karpa	,,	130		2,500	2,000
9.	Dob	,,	—		—	Shown under Saonri Tank
10.	Chhoti Chiknli	,,	—		—	Shown under Karpa Tank
11.	Kalmesura	G.9. Pranhita	106		1,600	1,300
12.	Likhari	,,	64		1,200	960
13.	Barangwari	,,	160		3,000	2,400
14.	Kutkheri Tank I	,,	30		1,000	500
15.	Kutkheri Tank II	,,	30		1,200	500
16.	Dahelwara	,,	130		2,500	2,000
17.	Chopna	,,	30		1,000	450
18.	Mandai	,,	30		1,500	450
19.	Bargaon	,,	30		1,200	500
20.	Dongaria	,,	30		600	500

Serial number	Name of scheme	Name of sub-basin	Capacity tanks (M.Cft)	Capacity Diversion Schemes (cusecs)	C. C. A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6	7
21.	Pastalai	G.9 Pranhita	50		1,600	800
22.	Babarbo	,,	160		3,000	2,400
23.	Bamanwara	,,	180		3,500	2,800
24.	Mahidpur	,,	40		800	600
25.	Kharkawar	,,	40		800	600
26.	Hiura	,,	50		1,200	800
27.	Chiknli	,,	40		1,000	700
28.	Sondia	,,	60		1,300	1,000
29.	Gubrel	,,	30		1,000	500
30.	Khalla	,,	70		1,300	1,000
31.	Andharia	,,	200		3,800	3,000
32.	Jaitpur	,,	60		1,500	1,000
33.	Mowar	,,	70		1,600	1,000
34.	Ghisi	,,	30		1,000	500
35.	Khapa Khatem	,,	50		1,000	700
36.	Maholi	,,	100		2,000	1,600
37.	Yenas	,,	30		1,000	500
38.	Dhona	,,	50		1,000	700
39.	Jawalkheda	,,	50		1,000	700
40.	Divatia	,,	30		800	400
41.	Shakkar Nala	G.8 Wardha	130		1,800	1,600
42.	Ghat Biroli	,,	100		1,500	1,300
43.	Patton	,,	60		1,000	900
44.	Dodiakhas	G.9 Pranhita	70		1,200	1,000
45.	Ghat Piparia	,,	35		800	500
	Total				**68,100**	**49,760**

Serial number	Name of scheme	Name of sub-basin	Capacit tanks (M.Cft)	Capacity Diversion Schemes (cusecs)	C. C. A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6	7
	Chhindwara district					
1.	Kari-Dongri	G.9 Pranhita	100		2,000	1,500
2.	Ojhakhairi	,,	100		2,000	1,500
3.	Dhorakubi	,,	50		1,000	800
4.	Job Nala	,,	200		3,500	3,000
5.	Boargaon	,,	30		800	500
6.	Jamlapani	,,	30		1,000	500
7.	Khori	,,	70		2,000	1,000
8.	Saliwara	,,	40		800	600
9.	Tendukhera	,,	40		800	600
10.	Kaparwari	,,	30		900	500
11.	Khirsadoh	,,	30		700	500
12.	Setia	,,	30		600	500
13.	Chargaon	,,	170		3,000	2,500
14.	Ramdoh Nala	,,	130		2,000	1,800
15.	Bodri Nala	,,	130		2,500	2,000
16.	Pura	,,	170		3,000	2,500
17.	Siregaon	,,	50		1,000	800
18.	Awargani	,,	130		2,500	2,000
19.	Khawasa	,,	100		1,800	1,400
20.	Bur Nala	,,	250		4,800	3,800
21.	Naiagaon	,,	100		1,800	1,460
22.	Pindradhana	,,	50		1,000	800
23.	Taturwara	,,	50		1,000	800
24.	Nakita	,,	130		2,500	2,000
25.	Mordongri	,,	21		500	320
26.	Temmi	,,	64		1,200	960
27.	Pangri	,,	50		1,000	800
28.	Ghadela	,,	80		1,500	1,250
29.	Koprawadi	,,	15		500	350
30.	Jhanki	,,	150		2,600	2,300
31.	Karaboh	,,	80		1,300	1,200
32.	Amarwara	,,	180		2,400	1,800
33.	Thaonri	,,	40		1,000	600
34.	Ricchan Nala	,,	180		3,000	2,700

Serial number	*Name of scheme*	*Name of sub-basin*	*Capacity tanks (M. Cft)*	*Capacity Diversion Schemes (cusecs)*	*C. C. A. or Ayacut (acres)*	*Area proposed to be irrigated (acres)*
1	2	3	4	5	6	7
35.	Goraiya	G.9 Pranhita	60		1,000	900
36.	Pipariay Birsa	,,	130		2.400	2,000
37.	Piparia Lalu	,,	70		1,200	1,000
38.	Parasia	,,	60		1,200	1,000
39.	Umaria Dhana	,,	30		900	500
40.	Jhanjaria Kutia	,,	60		1,000	1,000
41.	Chichgaon	,,	100		1,800	1,500
42.	Biaika	,,	40		600	600
43.	Markawara	,,	30		400	400
44.	Kekra	,,	300		5,000	4,500
45.	Sitapur	,,	70		1,000	1,000
46.	Garkhapa	,,	80		1,500	1,200
47.	Khairitola	,,	50		900	700
48.	Khamra	,,	200		4,000	3,200
49.	Nawalgaon	,,	180		3,200	2,800
50.	Wurra	,,	30		500	400
51.	Jamunia	,,	70		1,000	1,000
52.	Megdhan	,,	60		900	900
53.	Dawajhir	,,	70		1,200	1,000
54.	Madanpur	,,	130		2,400	2,000
55.	Sahpura	,,	180		3,000	2,700
56.	Pateni	,,	70		1,000	1,000
57.	Deori	,,	20		600	300
58.	Neorinala	,,	200		3,600	2,900
59.	Dhutera	,,	40		600	600
60.	Sagar	,,	80		1,500	1,200
61.	Bhaliwara	,,	70		1,000	1,000
62.	Halal	,,	30		500	400
63.	Sarasdol	,,	50		1,200	800
64.	Jungawani	,,	180		3,000	2,700
65.	Bardhana	,,	100		1,800	1,500
66.	Karabdol	,,	180		3,300	2,800
67.	Paunar	,,	50		800	750
68.	Dhasanwara	,,	60		1,000	900

Serial number	*Name of scheme*	*Name of sub-basin*	*Capacity tanks (M.Cft)*	*Capacity Diversion Schemes (cusecs)*	*C.C.A. or Ayacut (acres)*	*Area proposed to be irrigated (acres)*
1	2	3	4	5	6	7
69.	Chandangaon	G. 9 Pranhita	30		600	500
70.	Dungariao	,,	100		1,800	1,500
71.	Wardha weir	G.8 Wardha	280		4,500	4,000
72.	Dongaria	G.9 Pranhita	170		2,500	2,300
73.	Taronk	,,	50		1,500	800
74.	Karia	,,	140		2,500	2,000
75.	Bhimkhera	,,	100		1,500	1,300
76.	Chandameta	,,	60		1,000	900
77.	Chatna	,,	60		1,000	900
78.	Bicchua	,,	70		1,200	1,000
79.	Ghogra	,,	70		1,200	1,000
80.	Dhonora	,,	50		1,000	800
81.	Motur	,,	60		1,000	900
82.	Likhawari	,,	70		1,500	1,200
83.	Palachuri	,,	140		2,000	1,800
84.	Tinshi	,,	130		2,000	1,600
85.	Mandhahi	,,	110		4,000	1,500
86.	Umreth	,,	140		2,000	1,800
87.	Bijakwara	,,	110		2,500	1,500
88.	Saonli	,,	140		2,500	2,000
89.	Kamthi	,,	90		1,500	1,200
90.	Tekari	,,	90		1,500	1,200
91.	Narangi	,,	130		2,000	1,600
92.	Sank	,,	900		3,000	2,600
93.	Shivlaldhara	,,	70		1,200	1,000
94.	Jhiria	,,	110		2,000	1,500
	Total				**162,000**	**131,190**

Serial number	Name of scheme	Name of sub-basin	Capacity tanks (M. Cft.)	Capacity Diversion Schemes (cusecs)	C.C.A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6	7
	Durg district					
1.	Somatola	G. 12 Indravati	70		1,400	1,100
2.	Birjhutola	,,	50		1,000	700
3.	Maringpiring	,,	100		2,000	1,500
4.	Guhatola	,,	70		1,700	1,100
5.	Ekat Kanhar	,,	60		1,000	900
6.	Pandharwani	,,	40		800	650
7.	Saroli	,,	300		5,000	4,000
8.	Dongaritola	,,	70		1,300	1,000
9.	Palandur	,,	40		600	600
10.	Tatora Nala	,,	180		3,000	2,700
11.	Kujamtola	,,	100		1,700	1,500
12.	Bhainsbor	,,	50		800	700
13.	Pardeni	,,	130		2,000	2,000
14.	Dorke	,,	30		600	500
15.	Mudeli	,,	20		500	400
16.	Dorri Kalan	,,	50		900	800
17.	Nawagoan	,,	30		600	500
18.	Umarpal	,,	120		2,500	1,800
19.	Gattapal	,,	50		1,000	800
	Total				**28,400**	**23'250**
	Mandla district					
1.	Chotkera	G. 9 Pranhita	190		2,500	2,200
2.	Rukman Nala	,,	160		4,500	2,600
3.	Dongaria	,,	60		1,000	800
4.	Karegaon	,,	180		4,000	2,300
5.	Bharbeli	,,	35		600	500
6.	Kokiwara	,,	240		4,000	3,600
7.	Bejegaon	,,	35		600	500
8.	Bori	,,	140		2,000	1,800
	Total				19,200	14,300

Serial number	Name of scheme	Name of sub-basin	Capacity tanks (M. Cft.)	Capacity Diversion schemes (cusecs)	C.C.A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6	7
	Seoni district					
1.	Masur Nala	G.9 Pranhita	250		4,200	3,800
2.	Bawanthari	,,	300		5,000	4,000
3.	Pangripat Nala	,,	100		3,000	2,400
4.	Saradol	,,	60		1,000	800
5.	Belgaon	,,	130		2,500	2,000
6.	Bakori	,,	30		600	450
7.	Nayagaon	,,	70		1,200	1,000
8.	Kachnara	,,	200		3,900	3,100
9.	Manogarh	,,	180		3,000	2,700
10.	Newari	,,	40		600	600
11.	Khatkar	,,	130		2,500	2,000
12.	Chaira Nala	,,	60		900	900
13.	Saliwara	,,	40		600	600
14.	Manori	,,	160		2,800	2,400
15.	Gidkhari Nala	,,	130		2,500	2,000
16.	Tilepani	,,	30		900	500
17.	Bhimkund	,,	200		3,800	3,200
18.	Umarpani Tank II	,,	70		1,500	1,000
19.	Umarpani Tank I	,,				
20.	Suktara	,,	40		800	600
21.	Jamanpani	,,	50		1,000	800
22.	Kuro	,,	64		1,200	960
23.	Amoli	,,	100		2,000	1,600
24.	Talla	,,	67		2,000	1,000
25.	Baragon	,,	50		1,000	800
26.	Kekarwani	,,	100		2,500	2,200
27.	Ragha dehi	,,	140		2,000	1,800
28.	Amagarh	,,	70		1,200	1,000
29.	Panderwani	,,	60		1,000	900
30.	Anlra	,,	70		1,200	1,000

Serial number	Name of scheme	Name of sub-basin	Capacity tanks (M. Cft).	Capacity Diversion Schemes (cusecs)	C.C.A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6	7
31.	Ghotkhera	G. 9 Pranhita	140		2,500	2,000
32.	Malhanwara	,,	140		2,000	1,800
33.	Bhandurjheria	,,	210		3,000	2,700
34.	Khairi	,,	130		1,800	1,600
	Total				65,700	54,210
	Total for Madhya Pradesh				710,850	580,660
	MAHARASHTRA				**C.C.A.**	
	Amaravati district					
1.	Bandhara at Guhikhed	G.8. Wardna	—	4	500	320
2.	Bandhara at Talegaon	,,	—	5	600	400
3.	Bandhara at Khadaki	,,	—	5	500	353
	Total				1,600	1,070
	Yeotmal district					
1.	Taroda tank	G.7. Penganga	61	—	1,440	950
2.	Bandhara at Dahigaon	,,	—	20	2,500	1,600
3.	Bandhara at Bori-Machindra	,,	—	4	500	300
4.	Bandhara at Kumbharkham	,,	—	9	1,100	700
5.	Bandhara at Pimpalgaon	,,	—	5	700	400
6.	Bandhara at Kotoda	,,	—	5	600	400
7.	Bandhara at Musthi	,,	—	8	1,000	600
8.	Bandhara at Piwardol	,,	—	8	900	600
9.	Bandhara at Ghonsa	,,	—	8	850	640
	Total				9,590	6,190
	Total for Maharashtra				11,190	7,260

Serial number	*Name of scheme*	*Name of sub-basin*	*Capacity tanks (M.Cft.)*	*Capacity Diversion Schemes (cusecs)*	*C.C.A. or Ayacut (acres)*	*Area proposed to be irrigated (acres)*
1	2	3	4	5	6	7
	MYSORE					
	Nil					
		Included under small tanks and diversions				
	ORISSA				**Ayacut**	
	Koraput district					
1.	Kaniki	G.11 Indravati			1,300	1,300
2.	Sridanagri	,,			2,600	2,600
3.	Sindigam Silati	,,			4,500	4,500
	Total for Orissa				8,400	8,400
	Grand total				943,374	801,154

Table V

Particulars of small tanks and diversions referred to in III Plan but not yet approved for execution

Serial number	*Name of District*	*Name of sub-basin**	*Number of tanks and diversions*	*C.C.A. or Ayacut (acres)*	*Area proposed to be irrigated (acres)*
1	2	3	4	5	6
	ANDHRA PRADESH				
	Nil				
	MADHYA PRADESH			**C.C.A.**	
1.	Balaghat	G.9 Pranhita	18	N.A.	3,940
2.	Bastar	72% in G. 11 Indravati 16% in G. 12 Sabari 12% in G. 10 Lower Godavari	22	N.A.	4,810
3.	Betul	56% in G. 8 Wardha 44% in G. 9 Pranhita	5	N.A.	830
4.	Chhindwara	98% in G. 9 Pranhita 2% in G. 8 Wardha	16	N.A.	3,530
5.	Durg	60% in G. 11 Indravati 40% in G. 9 Pranhita	4	N.A.	630
6.	Mandla	G. 9 Pranhita	2	N.A.	200
7.	Seoni	G. 9 Pranhita	14	N.A.	2,760
	Total		**81**		**16,700**

Note:— (*i*) *The minor schemes shown above also include works executed in Community Development Blocks.*

(*ii*) *The new minor Irrigation Schemes of III Plan are still under investigation and the programme has yet to be finalised. The details furnished above are tentative and may also include some schemes with C.C.A. more than 500 acres.*

**The percentages in column 3 denote percentages of that part of the district named in column 2 which lies in the Godavari basin.*

Serial number	Name of District	Name of sub-basin	Number of tanks and diversions	C.C.A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6
	MAHARASHTRA				
				C.C.A.	
1.	Ahmednagar	56% in G. 2 Pravara 44% in G. 1 Upper Godavari and less than 1% in G. 4 Manjra	4	1,200	830
2.	Akola	87% in G. 7 Penganga 13% in G. 8 Wardha	10	5,000	4,200
3.	Aurangabad	100% in G. 8 Wardha; less than 1% in G. 7 Penganga	35	17,400	16,053
4.	Bhandhara	G. 9 Pranhita	65	30,000	15,585
5.	Bhir	72% in G. 1 Upper Godavari 28% in G. 4 Manjra	8	4,000	3,042
6.	Buldhana	51% in G. 7 Penganga 49% in G. 3 Purna	25	10,000	7,200
7.	Chanda	57% in G. 9 Pranhita 25% in G. 11 Indravati 17% in G. 8 Wardha 1% in G. 10 Lower Godavari	45	20,000	10,381
8.	Nagpur	67% in G. 9 Pranhita 33% in G. 8 Wardha	7	3,000	1,513
9.	Nanded	31% in G. 1 Upper Godavari 30% in G. 7 Penganga 18% in G. 4 Manjra 15% in G. 6 Maner 6% in G. 5 Middle Godavari	7	778	787
10.	Nasik	97% in G. 1 Upper Godavari 3% in G. 2 Pravara	6	2,970	2,374
11.	Osmanabad	90% in G. 4 Manjra 9% in G. 6 Maner 1% in G. 5 Middle Godavari	28	13,000	11,668
12.	Wardha	G. 8 Wardha	11	5,300	5,160
	Total		**251**	**112,648**	**78,793**

Serial number	*Name of District*	*Name of sub-basin*	*Number of tanks and diversions*	*C.C.A. or Ayacut (acres)*	*Area proposed to be irrigated (acres)*
1	2	3	4	5	6
	MYSORE				
	District-wise distribution and other particulars not yet determined.				
				Ayacut	
	Total			1,000	1,000
	ORISSA				
1.	Koraput	57% in G. 12 Sabari 43% in G. 11 Indravati	38	6,650	6,650

Table VI

Particulars of small tanks and diversions not included in III Plan

Serial number	*Name of District*	*Name of sub-basin**	*Number of tanks and diversions*	*C.C.A. or Ayacut (acres)*	*Area proposed to be irrigated (acres)*
1	2	3	4	5	6
	ANDHRA PRADESH			**Ayacut**	
1.	Adilabad	53% in G. 5 Middle Godavari 38% in G. 9 Pranhita 9% in G. 7 Penganga	50	1,809	1,809
2.	Karimnagar	57% in G. 6 Maner 31% in G. 5 Middle Godavari 12% in G. 10 Lower Godavari	19	1,762	1,762
3.	Medak	75% in G. 4 Manjra 25% in G. 6 Maner	1	100	100
4.	Visakhapatnam	G. 12 Sabari	3	160	160
5.	Warangal	64% in G. 10 Lower Godavari 36% in G. 6 Maner	2	357	357
	Total			**4,188**	**4,188**

**The percentages in column 3 denote percentages of that part of the district named in column 2 which lies in the Godavari basin.*

Serial number	Name of District	Name of sub-basin	Number of tanks and diversions	C.C.A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6
	MADHYA PRADESH				
	A. Construction of new schemes (small tanks and diversions)				
				C.C.A.	
1.	Balaghat	G. 9 Pranhita	1,000	140,000	100,000
2.	Bastar	72% in G. 11 Indravati 16% in G. 12 Sabari 12% in G. 10 Lower Godavari	7,000	1,000,000	300,000
3.	Betul	56% in G. 18 Wardha 44% in G. 9 Pranhita	800	110,000	80,000
4.	Chhindwara	98% in G. 9 Pranhita 2% in G. 8 Wardha	4,100	584,000	410,000
5.	Durg	60% in G. 11 Indravati 40% in G. 9 Pranhita	200	30,000	20,000
6.	Mandla	G. 9 Pranhita	100	14,000	10,000
7.	Seoni	G. 9 Pranhita	800	110,000	80,000
	Total			**1,988,000**	**1,000,000**
	B. Improvement to ex-Malguzari tanks				
1.	Balaghat		5,650	N.A.	49,000
2.	Bastar		1,890	N.A.	6,000
3.	Durg		740	N.A.	1,000
4.	Seoni		770	N.A.	5,000
	Total		**9,050**		**61,000**
	Total for Madhya Pradesh			**1,988,000**	**1,061,000**

Serial number	Name of District	Name of sub-basin	Number of tanks and diversions	C.C.A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6
	MAHARASHTRA			**C.C.A.**	
1.	Ahmednagar	56% in G. 2 Pravara			
		44% in G. 1 Upper Godavari			
		and less than 1% in G. 4 Manjra	61	30,500	30,000
2.	Akola	87% in G. 7 Penganga			
		13% in G. 8 Wardha	30	15,000	15,000
3	Amravati	100% in G. 8 Wardha			
		and less than 1% in G. 7 Penganga	44	22,000	21,430
4.	Aurangabad	61% in G. 1 Upper Godavari			
		39% in G. 3 Purna	122	60,500	60,000
5.	Bhandara	G. 9 Pranhita	230	113,000	112,500
6.	Bhir	72% in G. 1 Upper Godavari			
		28% in G. 4 Manjra	63	31,000	30,000
7.	Buldhana	51% in G. 7 Penganga			
		49% in G. 3 Purna	43	21,000	22,500
8.	Chanda	57% in G. 9 Pranhita			
		25% in G. 11 Indravati	225	112,500	112,500
		17% in G. 8 Wardha			
		1% in G. 10 Lower Godavari			
9.	Nagpur	67% in G. 9 Pranhita			
		33% in G. 8 Wardha	132	66,000	66,000
10.	Nanded	31% in G. 1 Upper Godavari			
		30% in G. 7 Penganga			
		18% in G. 4 Manjra			
		15% in G. 6 Maner			
		6% in G. 5 Middle Godavari	172	84,000	75,000
11.	Nasik	97% in G. 1 Upper Godavari			
		3% in G. 2 Pravara	170	84,000	75,000
12.	Osmanabad	90% in G. 4 Manjra			
		9% in G. 6 Maner			
		1% in G. 5 Middle Godavari	62	30,500	30,000

Serial number	Name of District	Name of sub-basin	Number of tanks and diversion	C.C.A. or Ayacut (acres)	Area proposed to be irrigated (acres)
1	2	3	4	5	6
				C.C.A.	
13.	Parbhani	46% in G. 3 Purna 31% in G. 1 Upper Godavari 23% in G. 7 Penganga	168	82,000	75,000
14.	Wardha	G. 8 Wardha	62	31,000	30,000
15.	Yeotmal	75% in G. 7 Penganga 25% in G. 8 Wardha	36	17,000	16,310
	Total		**1,620**	**800,000**	**771,240**
	MYSORE				
	Minor Irrigation works			120,000	97,000
		Includes Projects irrigating 500 to 5,000 acres also			
	ORISSA				
	Koraput	57% in G. 12 Sabari 43% in G. 11 Indravati			

Note:— Details of schemes have not yet been worked out but it is anticipated that 16 T.M.C. will be required for minor schemes, small tanks and diversions.

Table VII

Abstract of minor schemes, small tanks and diversions referred to in III Plan but not yet approved for execution

State/ District	Minor schemes as per Table III			Small tanks and diversions as per Table V			Total		Duty (acres per M.Cft.)	Proposed annual diversion (T.M.C)
	Number	C.C.A. or Ayacut	Proposed annual irrigation	Number	C.C.A. or Ayacut	Proposed annual irrigation	C.C.A. or Ayacut	Proposed annual irrigation		
1	2	3	4	5	6	7	8	9	10	11
		......acres....			..........acres.............					
Schemes on which a view has to be taken regarding their inclusion in III Plan										
ANDHRA PRADESH										
		Ayacut			**Ayacut**		**Ayacut**			
Karimnagar	1	2,750	2,750	—	—	—	2,750	2,750	6	0.46
Khammam	1	2,000	2,000	—	—	—	2,000	2,000	6	0.33
Total	**2**	**4,750**	**4,750**	—	—	—	**4,750**	**4,750**		**0.79**

Note:- The duty (acres per M.Cft.) has been as sumed as 6 based on Table IX and the assumption that irrigation in Telengana is generally 80% Abi and 20% Tabi

Schemes included in III Plan but not yet approved for execution

MADHYA PRADESH

State/ District	Number	C.C.A. or Ayacut	Proposed annual irrigation	Number	C.C.A. or Ayacut	Proposed annual irrigation	C.C.A. or Ayacut	Proposed annual irrigation	Duty (acres per M.Cft.)	Proposed annual diversion (T.M.C)
		C.C.A.			**C.C.A.**		**C.C.A.**			
Balaghat	3	3,550	2,943	18	(3,940)	3,940	7,490	6,883)		
Bastar	7	5,682	4,355	22	(4,810)	4,810	10,492	9,165)		
Betul	1	780	500	5	(830)	830	1,610	1,330)	11*	
Chhindwara	5	4,579	2,903	16	(3,530)	3,530	8,109	6,433)	12**	2.65
Durg	—	—	—	4	(630)	630	630	630)		
Mandla	—	—	—	2	(200)	200	200	200)		
Seoni	6	4,420	3,200	14	(2,760)	2,760	7,180	5,960)		
Total	**22**	**19,011**	**13,901**	**81**	**(16,700)**	**16,700**	**35,711**	**30,601**		

* *For minor schemes*

** *For small tanks and diversions*

Note:- 1. *Figures in brackets are assumed figures*

2. *The C.C.A. of small tanks and diversions in column 6 has been assumed to be the same as proposed annual irrigation*

State/ District	Minor schemes as per Table III			Small tanks and diversions as per Table V			Total		Duty (acres per M.Cft.)	Proposed annual diversion (T.M.C.)
	Number	C.C.A. or Ayacut	Proposed annual irrigation	Number	C.C.A. or Ayacut	Proposed annual irrigation	C.C.A. or Ayacut	Proposed annual irrigation		
1	2	3	4	5	6	7	8	9	10	11
		............acres......			......acres..............					
MAHARASHTRA										
Ahmednagar	2	2,660	2,030	4	1,200	830	3,860	2,860	17	0.16
Akola	—	—	—	10	5,000	4,200	5,000	4,200	15	0.28
Amravati	1	850	690	—	—	—	850	690	15	0.04
Aurangabad	—	—	—	35	17,400	16,053	17,400	16,053	25	0.64
Bhandhara	12	27,890	18,784	65	30,000	15,585	57,890	34,369	20	1.72
Bhir	—	—	—	8	4,000	3,042	4,000	3,042	25	0.12
Buldana	3	3,370	2,244	25	10,000	7,200	13,370	9,444	15	0.63
Chanda	18	26,272	14,491	45	20,000	10,381	46,272	24,872	20	1.24
Nagpur	13	33,407	22,640	7	3,000	1,513	36,407	153	20	0.01
Nanded	—	—	—	7	778	787	778	787	25	0.03
Nasik	2	4,700	3,780	6	2,970	2,374	7,670	6,154	17	0.36
Osmanabad	—	—	—	28	13,000	11,668	13,000	11,668	25	0.46
Wardha	—	—	—	11	5,300	5,160	5,300	5,160	15	0.34
Yeotmal	5	6,543	5,025	—	—	—	6,543	5,025	15	0.33
Total	**56**	**105,692**	**69,684**	**251**	**112,648**	**78,793**	**218,340**	**148,477**		**6.36**
MYSORE										
		Ayacut			**Ayacut**		**Ayacut**			
	N.A.	1,000	1,000	N.A.	1,000	1,000	2,000	2,000	5	0.40
ORISSA										
Koraput	6	4,200	4,200	38	6,650	6,650	10,850	10,850	12	0.90
Grand Total	**86**	**134,723**	**93,535**	**370**	**135,998**	**103,143**	**270,721**	**196,678**		**11.10**

Table VIII

Abstract of proposed minor schemes, small tanks and diversions not included in III Plan

State/ District	Minor schemes as per Table IV			Small tanks and diversions as per Table VI			Total		Duty (acres per M.Cft.)	Propose annuald diversion (T.M.C.)
	Number	C.C.A. or Ayacut	Proposed annual irrigation	Number	C.C.A or Ayacut	Proposed annual irrigation	C.C.A. or Ayacut	Proposed annual irrigation		
1	2	3	4	5	6	7	8	9	10	11
		......acres.....			.................acres..................					
ANDHRA PRADESH										
		Ayacut			**Ayacut**		**Ayacut**			
Adilabad	46	47,202	47,202	50	1,809	1,809	49,011	49,011	6	8.17
Hyderabad	4	5,021	5,021	—	—	—	5,021	5,021	6	0.84
Karimnagar	26	31,279	32,179	19	1,762	1,762	33,041	33,941	6	5.66
Khammam	16	27,568	30,068	—	—	—	27,568	30,068	6	5.01
Medak	13	15,065	15,065	1	100	100	15,165	15,165	6	2.53
Nizamabad	13	14,427	14,427	—	—	—	14,427	14,427	6	2.40
Visakhapatnam	—	—	—	3	160	160	160	160	6	0.03
Warangal	13	12,372	12,372	2	357	357	12,729	12,729	6	2.12
Total	**131**	**152,934**	**156,334**	**75**	**4,188**	**4,188**	**157,122**	**160,522**		**26.76**

Note : The duty (acres per M.Cft.) has been assumed as 6 for Telengana districts based on Table IX *and the assumption that irrigation there is generally 80% Abi and 20% Tabi. The same figure has been assumed for Andhra districts also.*

State/ District	Minor schemes as per Table IV			Small tanks and diversions as per Table VI			Total		Duty (acres per M.Cft.)	Proposed annual diversion (T.M.C.)
	Number	C.C.A. or Ayacut	Proposed annual irrigation	Number	C.C.A. or Ayacut	Proposed annual irrigation	C.C.A. or Ayacut	Proposed annual irrigation		
1	2	3	4	5	6	7	8	9	10	11
		....acres....			....acres..........					
MADHYA PRADESH										
		C.C.A.			**C.C.A.**		**C.C.A.**			
Balaghat	21	37,500	29,750	6,650	140,000	149,000	177,500	178,750)		
Bastar	179	329,950	278,200	8,890	1,000,000	306,000	1,329.950	584,200)		
Betul	45	68,100	49,760	800	110,000	80,000	178,100	129,760)		
Chhindwara	94	162,000	131,190	4,100	584,000	410,000	746,000	541,190)	11*	
Durg	19	28,400	23,250	940	30,000	21,000	58,400	44,250)	12**	
Mandla	8	19,200	14,300	100	14,000	10,000	33,200	24,300)		
Seoni	34	65,700	54,210	1,570	110,000	85,000	175,700	139,210)		
Total	**400**	**710,850**	**580,660**	**23,050**	**1,988,000**	**1,061,000**	**2,698,850**	**1,641,660)**		**141.21**

** For minor schemes*

*** For small tanks and diversions*

MAHARASHTRA

State/ District	Number	C.C.A. or Ayacut	Proposed annual irrigation	Number	C.C.A. or Ayacut	Proposed annual irrigation	C.C.A. or Ayacut	Proposed annual irrigation	Duty (acres per M.Cft.)	Proposed annual diversion (T.M.C.)
Ahmednagar	—	—	—	61	30,500	30,000	30,500	30,000	17	1.71
Akola	—	—	—	30	15,000	15,000	15,000	15,000	15	1.00
Amravati	3	1,600	1,070	44	22,000	21,430	23,600	22,500	15	1.50
Aurangabad	—	—	—	122	60,500	60,000	60,500	60,000	25	2.40
Bhandara	—	—	—	230	113,000	112,500	113,000	112,500	20	5.63
Bhir	—	—	—	63	31,000	30,000	31,000	30,000	25	1.20
Buldana	—	—	—	43	21,000	22,500	21,000	22,500	15	1.50
Chanda	—	—	—	225	112,500	112,500	112,500	112,500	20	5.63
Nagpur	—	—	—	132	66,000	66,000	66,000	66,000	20	3.30

State/ District	Minor schemes as per Table IV			Small tanks and diveesions as per Table VI			Total		Duty (acres per M.C ft)	Proposed annual diversion (T.M.C.)
	Number	C.C.A. or Ayacut	Proposed annual irrigation	Number	C.C.A. or Ayacut	Proposed annual irrigation	C.C.A. or Ayacut	Proposed annual irrigation		
1	2	3	4	5	6	7	8	9	10	11
		........acres........			..............acres..............					
		C.C.A.			C.C.A.		C.C.A.			
Nanded	—	—	—	172	84,000	75,000	84,000	75,000	25	3.00
Nasik	—	—	—	170	84,000	75,000	84,000	75,000	17	4.41
Osmanabad	—	—	—	62	30,500	30,000	30,500	30,000	25	1.20
Parbhani	—	—	—	168	82,000	75,000	82,000	75,000	25	3.00
Wardha	—	—	—	62	31,000	30,000	31,000	30,000	15	2.00
Yeotmal	9	9,590	6,190	36	17,000	16,310	17,000	16,310	15	1.08
Total	**12**	**11,190**	**7,260**	**1,620**	**800,000**	**771,240**	**811,190**	**778,500**		**38.56**
MYSORE		**Ayacut**			**Ayacut**		**Ayacut**			
	N.A.	(60,000)	(48,500)	N.A.	(60,000)	(48,500)	120,000	97,000	5	19.40

Note: The total Ayacut and area proposed to be irrigated have been split up equally as between minor schemes, small tanks and diversions.

State/ District	2	3	4	5	6	7	8	9	10	11
ORISSA										
Koraput	3	8,400	8,400	N.A.	(183,600)	183,600	(192,000)	(192,000)	12	16.00

Note: 1. *The proposed annual irrigation in column* 9 *has been worked out from the figures given in column* 10 *and* 11.

2. *The total Ayacut has been assumed to be the same as the total proposed annunal irrigation.*

3. *Column* 6 *and* 7 *have been derived from column* 8 *and* 9 *and column* 3 *and* 4 *respectively.*

State/ District	2	3	4	5	6	7	8	9	10	11
Grand total	**546**	**943,374**	**801,154**	**24,745**	**3,035, 788**	**2,068, 528**	**3,979,162,**	**2,869,682**		**241.93**

Table IX

Crop pattern and duty, district-wise

Serial number	*State/ District*	*Average annual rainfall (inches)*	*Proposed crop pattern*	*Proposed duty (acres per M.Cft)*
1	2	3	4	5
	ANDHRA PRADESH			
1.	Adilabad	39.4	*Abi* and *Tabi* (Paddy)	6.67 for *Abi* 3.33 for *Tabi*
			Kharif and *Rabi*	*Kharif* 33.3 *Rabi* 15.15
2.	Hyderabad	27.6	*Abi* and *Tabi*	6.67 for *Abi* 3.33 for *Tabi*
3.	Karimnagar	38.4	,,	,,
4.	Khammam	41.3	,,	,,
5.	Medak	33.5	,,	,,
6.	Nizamabad	39.4	,,	,,
7.	Visakhapatnam	45.3	I crop paddy	5
8.	Warangal	41.3	*Abi and Tabi*	6.67 for *Abi* 3.33 for *Tabi*
	MADHYA PRADESH			
1.	Balaghat	63.0	For minor schemes	11
2.	Bastar	59.1		
3.	Betul	43.3	*Kharif* 68% *Rabi* 30% Perennials 2%	
4.	Chindwara	45		
5.	Durg	51.2	For small tanks and diversions	
6.	Mandla	59.1		
7.	Seoni	55.1	*Kharif* 70%; *Rabi* 30%	12

Serial number	State/ District	Average annual rainfall (inches)	Proposed crop pattern	Proposed duty (acres per M.C ft.)
1	2	3	4	5
	MAHARASHTRA			
1.	Ahmednagar	25.6	*Kharif* 50% *Rabi* 50%	17.5
2.	Akola	33.5	*Kharif* 40% *Rabi* 40% Two seasonal 20%	15
3.	Amravati	35.4	*Kharif* 40% *Rabi* 40% Two seasonal 20%	15
4.	Aurangabad	27.6	*Kharif* 50% *Rabi* 50%	25
5.	Bhandara	59.1	Mostly paddy *Kharif*	20
6.	Bhir	27.6	*Kharif* 50% *Rabi* 50%	25
7.	Buldhana	33.5	*Kharif* 40% *Rabi* 40% Two seasonal 20%	15
8.	Chanda	55.1	*Kharif*	20
9.	Nagpur	46.3	*Kharif* 40% *Rabi* 60%	20
10.	Nanded	39.4	*Kharif* 50% *Rabi* 50%	25
11.	Nasik	39.4	*Rabi* 100%	17
12.	Osmanabad	33.5	*Kharif* 50% *Rabi* 50%	25
13.	Parbhani	33.5	,,	25
14.	Wardha	43.3	*Kharif* 40% *Rabi* 40% Two seasonal 20%	15
15.	Yeotmal	39.4		15
	MYSORE			
1.	Bidar	15.4	Paddy	5
	ORISSA			
1.	Koraput	59.1	Paddy	12